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ABSTRACT

This report describes the attempts of five university geography departments -- at Clark University and the Universities of Illinois, Iowa, Colorado, and California at Berkeley -- to explore ways for incorporating teaching preparation into the programs of their docutoral students. The Objective of the project was to propagate among geographers the concept of teaching as responsibility for learning and to take the lead in putting that concept into action. Each department developed its own unique program based on the overall objective. The report is divided into three parts. Part one provides an introduction to the background and purpose of the project. Part two provides recommendations on geographic education as the master framework for teaching innovation, student participation, intended learner outcomes, management models, exploration models, and sharing and delegating authority to be used by future directors of local training programs. Part three provides recommendations for structuring and making a workable national system. Appendices include the individual reports upon which the recommendations are based. (Author/DE)

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A TRIAL YEAR

Director's Report, Project on Teaching
and Learning in Graduate Geography,
Phase I (July, 1973 to June, 1974)

William D. Pattison
and
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Project Supported by Grant from the National Science Foundation
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Part One. STATEMENT OF THE SITUATION

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1. Introduction

In July, 1973, departments of geography on five university campuses entered into a new cooperative relationship with the Association of American Geographers to explore ways for incorporating teaching preparation into the programs of doctoral students. Thereupon, the Project on Teaching and Learning in Graduate Geography (TLGG) came into being.[1] The present report has been drafted following a review of intervening activities and an analysis of accounts by project representatives in the departments. It is presented as an evaluative interpretation of Phase I of the project.

The report is divided into three parts. In Part One, we try to establish in relatively few words the essential facts of the project: who we are, what we have been doing, why we have been doing it, and how our actions seem to relate to those of others interested in educational improvement, both now and in the past. In Parts Two and Three we report on lessons learned during Phase I. Taking the form of tentative recommendations, these lessons are addressed to future directors of local training programs in Part Two, and to future organizers of national projects in Part Three. We regard both parts as evidence of progress toward the principled knowledge about training preparation at which we have aimed from the time the project was first broached to the National Science Foundation.

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[1] Funded by the National Science Foundation as "Teacher Development in Ph.D. Programs in Geography," (GZ-2816).

2. Our Perception of the Problem

Speaking for the group of initiative-takers brought together by TLGG, we can say that the project has been regarded from the beginning as a problem-solving organization. The challenge as seen by us has been to help our cognitive community -- the geographic discipline -- reorient its view of teaching. We cannot claim that TLGG initiated the reorientation process. A break occurred in the mid-1960's, largely attributable to publicly funded interventions. Institutes, especially those organized under the National Defense Education Act, must be given a large share of the credit, in that they opened a direct dialogue between professors and educators from "the other teaching culture," that of America's elementary and secondary schools.

To some extent, credit must go too to the Commission on College Geography,[1] though probably somewhat more so to its predecessor, the Geography in Liberal Education Project.[2] Bearing directly on the emergence of TLGG were the experiences of some geographers as producers of curriculum materials for the High School Geography Project -- especially at a late stage when they were learning to respond to the "consumers" of those materials.[3] Most immediately related were the efforts, a few years ago, of a handful of crusaders to open the eyes of their fellow geographers to the potential personal meaningfulness of teaching through four workshops on introductory college courses (often referred to as the Road Shows.)[1] Two regional conferences organized as extensions of those workshops led directly to the creation of TLGG.

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[1] Established in 1965 as one of a family of commissions, the Commission on College Geography has sponsored three continuing series of papers with a succession of grants from the National Science Foundation, exploring a number of issues in undergraduate geography. The CCG has also sponsored a series of articulation conferences between two- and four-year collegiate institutions.

[2] This project began as a committee in 1961, was established as a formal project by the AAG in 1963, and published its report, Geography in Undergraduate Liberal Education, in 1965. Its self-defined task was "to investigate ways in which geography might be introduced into the curricular structure of liberal arts colleges where little or no geography was then offered, and to develop a set of general recommendations for the improvement of college undergraduate programs in geography."

[3] See William D. Pattison, "The Producers: A Social History," Chapter Six in From Geographic Discipline to Inquiring Student, Final Report on the High School Geography Project, edited by Donald J. Patton (Washington: Association of American Geographers, 1970).

Each of these innovational activities brought into prominence at least one of the geographers who would later become a principal in TLGG. As their roles developed, the Association of American Geographers was re-ordering its priorities, becoming more and more directly concerned with education through the same projects. The AAG's coordination of change-making efforts achieved a new level of definition by assuming leadership in CONPASS (Consortium of Professional Associations for Study of Special Teacher Improvement Programs). It represented geography at the CONPASS Grove Park Institute (June, 1969), out of which came concrete recommendations for "modernization" of the field's teaching.[2] The Association was by then moving rapidly toward readiness for the responsibilities of TLGG.

As TLGG matured, the doctoral departments of geography -- about 50 in all -- were emerging as the most promising focus for follow-through on earlier projects. Comprising the intellectual core of the geographic community, these units were eminently eligible for involvement. Further, many of them had felt the impact of the workshops on introductory courses or had been otherwise touched by innovational activity. When proposals for action were solicited from those departments which had shown general interest in teaching improvement, the response came almost always from a resident reformer with a history of project experience.

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[1] The background and character of these conferences have been described by John M. Ball, et al., "Experiments in Teaching College Geography: A Report to the Profession," in The Professional Geographer, Vol. XXIV, No. 4 (November, 1972), pp. 350-361.

[2] This institute was sponsored by the U.S. Office of Education at the Grove Park Inn, Asheville, North Carolina. The institute proceedings are presented in Thomas Vogt, ed., Five Levels of Incompetence: Higher Education, Teaching and the Education of Teachers (Washington: Consortium of Professional Associations for Study of Special Teacher Improvement Programs, 1970).

To appreciate the position in which the typical reformer found himself, it must be borne in mind that the attitudinal milieu of a doctoral department in geography generally reflects a tradition that may be as old as American post-college education itself. It is a tradition that calls upon the university to take responsibility for generating new and better ways of thinking about nature and society, therefore encouraging the growth of specialized disciplines, each of which comprises a systematic, method-concious conversation among qualified scholars.[1] The "catch" is that the faculties of the respective disciplines -- not least that of geography -- have found it difficult to conceive of teaching as anything more than the transmission of their disciplinary wisdom. The drive to develop a field of knowledge, such as geography, has too often obscured the peculiar demands arising from the developmental needs of students. Recognition of this fact led the classicist William Arrowsmith several years ago to declare the prospects for creative teaching hopeless wherever the disciplines dominate.[2]

In effect, TLGG has dedicated itself to proving Arrowsmith wrong, finding justification for its hopes of success largely in a concentration of efforts on this limited objective: to establish teaching preparation programs within doctoral departments. By this means TLGG originally proposed to the National Science Foundation that it would foster an alternate philosophy of education among Ph.D. programs.[1] Beyond that intent has always stood the larger aim of exerting a discipline-wide influence for teaching reform. In pursuit of that end, during the past year each participating program has adopted, in some sense, a "learning" frame of reference. Or to put the matter another way, the directors of the programs have demonstrated their agreement with this statement:

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[1] This tradition is particularly well characterized in Nicholas S. Thompson, "The Failure of Pluralism," in Change Magazine, Vol. III, No. 6 (October, 1971), pp. 27-32.

[2] William Arrowsmith, "The Future of Teaching," keynote address, meeting of American Council on Education, New Orleans, Louisiana, October 13, 1966. Subsequently re-published in Calvin B.T. Lee, ed., Improving College Teaching (Washington: American Council on Education, 1967), pp. 57-71.

> The mission of our project is to propagate among geographers the concept of teaching as responsibility for learning and to take the lead in putting that concept into action.[2]

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[1] Although it was not stated in the formal proposal, this intent was communicated to the National Science Foundation during preliminary discussions.

[2] This statement was put before the program directors at the opening session of the project conference that inaugurated Phase II of TLGG, Ann Arbor, Michigan, August 15-16, 1974.

3. Historical Perspective on our Response

A search of the literature and our own inter-organizational correspondence has made it possible to gain some perspective on TLGG. To begin, it has become apparent that the project is one of many similar efforts that have been mounted during the past half-century or so. In 1930, a survey of major universities made in connection with a conference on the subject revealed that formal programs for the preparation of college teachers were being attempted at Chicago, Clark, Idaho, Iowa, Ohio State and Oregon.[1] In 1949, a survey associated with a similar conference yielded this list of institutions:[2]

Chicago
Colgate
Colorado
Cornell
Denver
Emory
Kansas State
Michigan State
Michigan
Minnesota
Mississippi
Northwestern
Ohio State
Oregon
Pennsylvania State
Radcliffe
Syracuse
Wisconsin

Still others were identified in 1958, when a third conference was held.[3]

Up to a point, these earlier undertakings and the literature associated with them can be seen to have been consistent with the spirit and purpose of TLGG. For example, a commission report giving rise to the 1949 conference charged,

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[1] William S. Gray, ed., *The Training of College Teachers, Including Their Preliminary Preparation and In-Service Improvement*, Proceedings of the Institute for Administrative Officers of Higher Institutions, 1930 (Chicago: University of Chicago Press, 1930).

[2] Theodore C. Blegen and Russell M. Cooper, eds., *The Preparation of College Teachers*, Report of a Conference held at Chicago, Illinois, December 8-10, 1949 (Washington: American Council on Education, 1950)

[3] Joseph Axelrod, ed., *Graduate Study for Future College Teachers*, Report of the Conference on College Teacher Preparation Programs, sponsored by the Committee on College Teaching of the American Council on Education (Washington: American Council on Education, 1959).

> It is in the preparation of college teachers that the graduate school program is seriously inadequate. Its single-minded emphasis on the research tradition and its purpose of forcing all of its students into the mold of a narrow specialism do not produce college teachers of the kind we urgently need.[1]

On the preparation of graduate students for teaching, the same report said,

> The most conspicuous weakness of the current graduate programs is the failure to provide potential faculty members with basic skills and the art necessary to impart knowledge to others. College teaching is the only major profession for which there does not exist a well-defined program of preparation directed towards developing the skills which it is essential for the practitioner to possess.[2]

Further, clear precedents were being set by 1958 for the inclusion of training for teaching within programs for the "regular" degree (Ph.D.), in the manner of TLGG, as against the relegation of such training to programs for special degrees (Ed.D. or a modified M.A.). The general conclusion of the 1958 Conference was that an option for training in teaching competence should be made available in Ph.D. programs everywhere.

One can also find in the past record some reflection of the preference that TLGG has shown for placing training leadership in the hands of persons knowledgeable in the substantive field of specialization, in our case geography. The geographer Harlan Barrows took this view in a paper presented at the 1930 conference:

> There can be no question of the great value of special courses on the organization and presentation of geographic material for teaching

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[1] "Higher Education for American Democracy: A Report of The President's Commission on Higher Education," Vol. I: Establishing the Goals (New York: Harper & Bros., 1947), p. 89.

[2] "Higher Education for American Democracy," Vol. IV: Staffing Higher Education (New York: Harper & Bros., 1947), p. 16.

> purposes when conducted by a person thoroughly equipped both in education and in geography. It is, I think, the futile effort of some educators to apply the general principles of education to special fields with whose philosophy, subject matter, and research methods they have little acquaintance that has brought "method courses" into disfavor in many academic circles.[1]

This feeling of distrust for educational abstractions, however, did not prevent heavy reliance upon professionals from the field of education for overall guidance. Thus, a program conducted at Chicago from 1953 to 1958, with the support of the Carnegie Corporation, brought together selected fellows from a broad range of departments, committees and professional schools, whose experience in practice teaching was coordinated through a seminar led by a professor of education.[2]

One should notice that, under the terms of this system, a given department joined with other academic units on the same campus in sending students to a teaching preparation program. This form of organization has continued to hold appeal for many academicians, having been re-established in recent years on a somewhat different basis with the creation of institutional resource centers on major university campuses. These centers, founded to improve the quality of teaching campus-wide, have normally been conceived of as aid-stations for professors, but their utility for TA training has not always been ignored.

The true innovation of the 1970's has been the linking up, for purposes of teaching preparation, of a given department on one campus with departments in the same field on other campuses. This new form of organization -- which need not conflict with the old -- has been made possible, it seems, by the rise of educational change-making in colleges and universities as an acceptable objective for discipline-specific, national associations. To our knowledge, the two associations that have pioneered in bringing departments from many campuses together in the interests of teaching preparation are the AAG and the Joint Council on Economic Education.[1]

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[1] Harlan H. Barrows, "The Specific Professional Training at the University of Chicago of Prospective Teachers of Geography in Colleges, Universities, and the Teacher-Training Institutions," from The Training of College Teachers, edited by William S. Gray (Chicago: University of Chicago Press, 1930), p. 117.

[2] Harold B. Dunkel, "Training College Teachers," Journal of Higher Education, Vol. XXIX (January, 1958), pp. 1-7, 57-58.

The Joint Council on Economic Education has aimed, as we have, at the promotion of programs for "regular" Ph.D. students. Their try-outs began at exactly the same time as our trials, in September, 1973. In striking contrast to us, however, they have committed themselves to standardization of content and procedure. Theirs is a package approach, in which a model curriculum, drafted in the summer of 1973, received a first run-through at two universities in the fall semester, and two more in the spring. The expectation is that the number of adopters will expand to about twelve in five years. Revision is to be ongoing, of course.

A third group, the American Political Science Association, also launched an educational reform venture -- the Political Science Education Project -- in the fall of 1973. Our understanding of this disciplinary initiative, which resembles the Commission on College Geography in the emphasis given to subject mastery, is that teaching preparation is not to receive early attention, but that its turn will come as the project evolves. As we note near the end of the present report, we have been taking care to keep these people informed.

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[1] The Joint Council on Economic Education differs from the AAG in two respects: it is a non-membership organization, and it has always had instructional improvement as its primary purpose. The true counterpart to the AAG in economics is the American Economic Association.

4. The Constituent Programs

These, then, are the departments that TLGG has brought into a consortium relationship for purposes of teaching preparation as of July 1, 1973:

School of Geography, Clark University
  Chairman: Saul B. Cohen
  TLGG Director: Duane F. Knos

Department of Geography, University of Illinois (Champaign-Urbana)
  Head: John Thompson
  TLGG Director: Janice Monk

Department of Geography, University of Iowa
  Chairman: Clyde F. Kohn
  TLGG Director: James Lindberg

Department of Geography, University of Colorado
  Chairman: Nicholas Helburn
  TLGG Director: A. David Hill

Department of Geography, University of California at Berkeley
  Chairman: James J. Parsons
  TLGG Directors: Risa Palm and Robert Reed

Each department was ready to proceed with a training program. As Figure 1 makes evident, the programs tended to unfold along parallel lines. When reviewed, three components stand out: a pre-session orientation period, a coordinating seminar, and a practicum. The events in each are summarized in the following paragraphs.

Pre-Session Component

Iowa held a three-day off-campus retreat as soon as classes began in the fall. It was attended by all those to be engaged in undergraduate teaching for the year: six of the department's ten faculty and eighteen graduate students. The general purpose was later described by the director as "narrow -- to raise consciousness, generate enthusiasm, and introduce people to one another." Departmental housekeeping was minimized and no training was attempted. To this end, there were short (two-hour) morning and afternoon sessions with (a) discussions of the responsibilities of teaching; (b) analysis of specific topics by five-person work groups; (c) comments by the professors who would be supervising the teaching assistants; and (d)

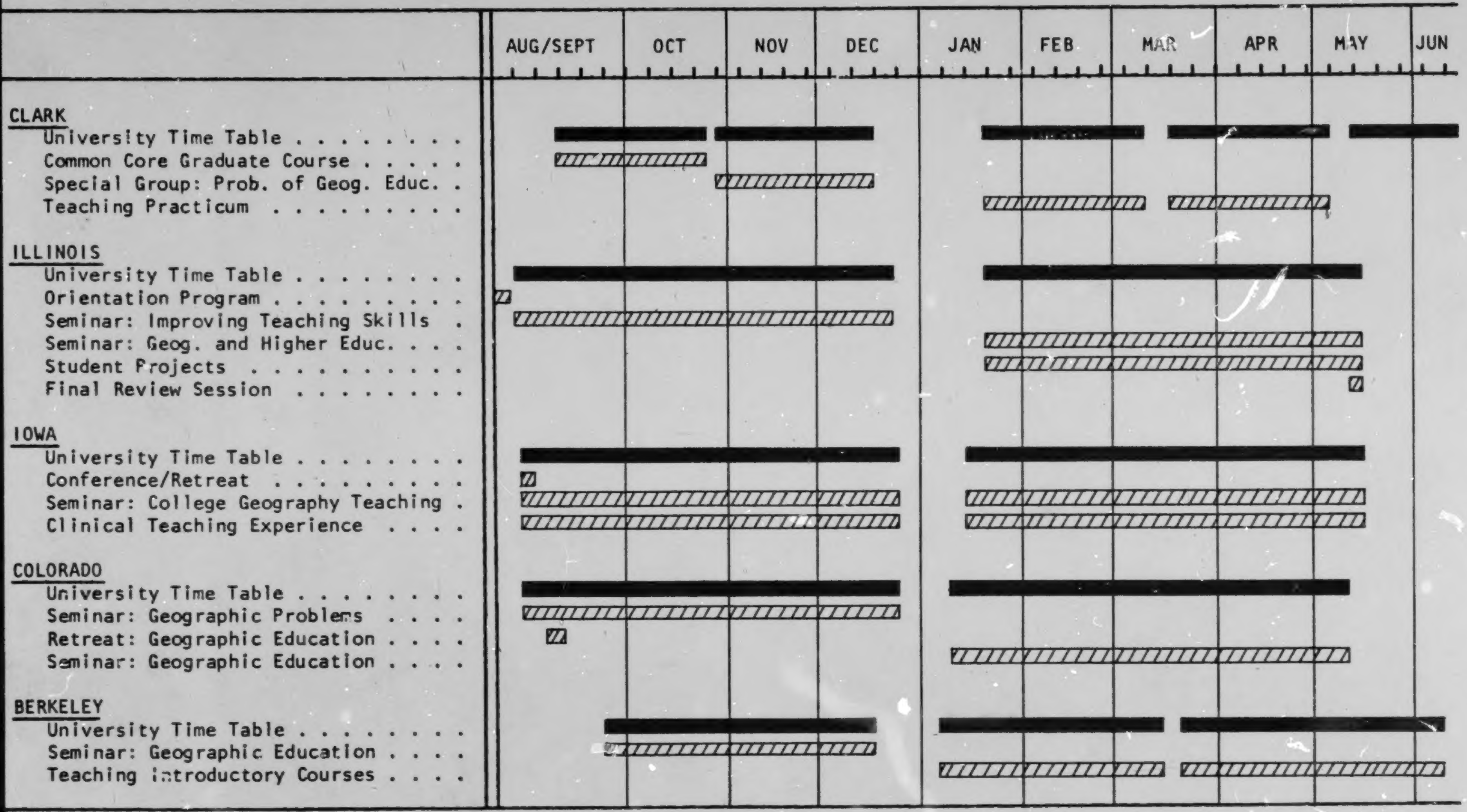

Fig. 1 - Schedule of Activities of Pilot Programs, 1973-74

an evaluation of the retreat itself.

Illinois, by contrast, held a one-week orientation program on campus. Here, there was an attempt to develop teaching skills. The responsibility for this program was shared by the TLGG program director and a senior faculty member who had run a similar session by himself in previous years. Consequently, the general purpose and the agenda did not differ greatly from what had gone before. The participants, all new teaching assistants, heard lectures by the senior faculty member on the teacher's role, lecturing, leading discussions, and the evaluation of student learning. The participants then prepared their own mini-lectures, as well as class discussions and quizzes for a hypothetical class. Following each presentation, there was a critique by the faculty and other participants. The final day was given over to a question-and-answer orientation to the university in general and the department in particular.

Colorado, like Iowa, held a three-day off-campus retreat, but with a wider range of purposes. The meeting was designed to provide (a) an orientation for new students and a chance for them to meet the faculty; (b) discussions on the teaching of geography; and (c) an opportunity for old and new personnel to get acquainted. All faculty and graduate students were invited. Seven of the sixteen faculty attended, along with nine old and twenty new graduate students. The sessions devoted to teaching were varied in content, including pair interviewing, individual reporting on positive and negative learning experiences, a panel discussion on an article from _Change_ Magazine, small group sharing of learning and feelings about the day, a simulation game, and psycho-social exercises on communication and value clarification.

Seminars

All five programs featured seminars on the teaching of geography in higher education. However, there were major differences in the way they were run.

One of these dimensions of variation was the manner and extent of reliance on people other than the geographer responsible for the course, who was in all cases the director or co-director of the local TLGG program. At Iowa, the leader had taught much the same seminar before, and felt capable of handling it alone, which he did. The situation at Colorado was similar, except that there were two leaders, both with several years of experience in the special subfield of geographic education. The students in the Colorado seminar -- who selected the topics to be discussed -- decided that they wanted to invite a third Colorado geographer at one point to talk about his role in the High School Geography Project. The director at Illinois also directed the seminar primarily by herself, although at times she used a former colleague in the Office of Instruction Resources at Illinois as a resource person.

Clark's was the only case where a non-geographer -- a professor of education -- shared leadership responsibility, both in the seminar and in the program as a whole. For a few months he took full responsibility, when the geography co-director was ill and was unable to carry on his duties. The Berkeley program was distinguished by its extensive reliance on visiting experts. This was at least partially a result of the fact that the two directors had little experience in geographic education as a specialization. Their approach was facilitated by the availability of an exceptionally rich array of qualified people, both from the university and from elsewhere in California.

A lesser but still significant dimension of variation was that of seminar tactics. Clark emphasized exercises for stimulating creativity and imagination, experiences in group formation, and strongly introspective discussions. This was done in the belief that a "freeing-up"of the students' thinking processes and an enhancement of self-awareness would produce the independent yet communicating kind of teaching that was desired. Berkeley relied primarily on the assimilation of expert opinion. A combination of readings, lectures and discussions was used in an attempt to help students acquire the best there was to be had. Illinois, offering a third alternative, concentrated on an anlysis of teaching developed in close association with the students' current teaching experience. Observation of teaching, usually self-observation, was followed by a careful critique -- by the student himself, by his peers, and/or by the seminar director. The Colorado and Iowa programs drew on all three of these approaches.

Practicum

All five programs had an experiential component. That is to say, all of the participating students engaged in one kind of teaching or another. Their activities -- referred to here as practicum experience -- ranged from the preparation of course materials to full responsibility for conducting a course.

Again, however, there was considerable variation from program to program. First, a difference could be observed in the relation established between practicum and teaching assistant service. The practicum was placed within the responsibilities of the teaching assistantship at Iowa and Colorado, but it was pursued beyond the teaching assistantship at Illinois and Berkeley and independent of it at Clark. Second, depending in part on how the first option was settled, the number of faculty members associated with the students' teaching varied. At Illinois, for example, every member of the geography department submitted a list of teaching projects that they were ready to work on with TLGG participants. At Iowa, the practicum took place under the guidance of the four faculty who taught two large introductory courses. The students at Berkeley and Clark developed teaching projects, some of which required faculty cooperation, but many of which were executed independently.

Third, there was variation in the means employed in trying to assure that the practicum would comprise a set of true learning experiences. Undoubtedly, much of the reflection required for learning about teaching occurred without direction, as students analyzed their experiences on their own or discussed them with peers or with various faculty members. Yet there was a difference worth noting in the way formal provision was made.

At Illinois and Iowa, the seminar was set up such that certain times were given over to a discussion of current teaching. At Illinois and Clark there were individual and small-group clinical sessions. Colorado had a workshop for teaching assistants that was separated from the seminar altogether, as well as a course set up to give credit for projects on experimental teaching. Students at Berkeley met informally and voluntarily an hour before each seminar session to discuss their experiences as teaching assistants.

Special Components

Two components were peculiar to individual programs. Colorado set up a Geographic Education Lab and staffed it with three graduate student coordinators. It became a place where students could come to relax, to find books on geographic education, and to find people ready to talk about teaching. In addition, the three residents were able to keep informed about events, feelings and changing attitudes with respect to teaching through this lab.

Iowa tried having senior graduate students serve as mentors for junior teaching assistants. This idea was patterned after the Teaching Fellow program at the University of Michigan, publicized in Frank Koen's "The Preparation of College Teachers."[1] Four experienced graduate students were assigned to work with beginning teaching assistants in both "helper" and "demonstrator" roles.

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[1] Frank Koen, "The Preparation of College Teachers," in Preservice Preparation of College Biology Teachers, Publication No. 24 (Washington: Commission on Undergraduate Education in the Biological Sciences, 1970).

Part Two. LEARNING FROM EXPERIENCES AT THE LOCAL LEVEL

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1. Introduction

All told, there were about 220 students to whom the five TLGG programs brought a chance for teaching preparation, between September 1973 and June 1974. The question asked here is the following: what can be learned from the experience of the program directors in dealing with these people? The directors themselves were made aware at about mid-year that this question would be asked by way of a request for

> preparation of an interpretive paper...in which you undertake to advance this TLGG objective: development of principled knowledge germane to the preparation of teachers for higher education.

That was the project (or national) director's invitation. To it was added a note on the expectation on the part of the steering committee chairman that each author would be

> setting forth hunches and hypotheses about training college teachers, interpreting data acquired during project activities /and/ stating the assumptions and propositions which led you to design the program you did.

At the end of the year, the responses came in. They are reproduced in this report as Appendix A. In the following sections, lessons drawn from these papers -- and from related sources, including interviews -- are passed on.

2. On Geographic Education as the Master Frame

To be prepared for the first lesson, the reader should be reminded that in our original proposal to the National Science Foundation the programs of TLGG were described as training opportunities for "leadership in geographic education." Preparation for such leadership was said to be subject to pursuit along paths A, B, and C, as the proposal states:

> A refers to the largest population to be produced via these programs: individuals who progress from a closely supervised teaching experience while developing teaching skills, to increased participation in their own course planning, to individual autonomy for developing and teaching their own courses.
>
> B refers to individuals who, along with achieving competence at the A level, continue with an emphasis on developing skills and competencies which will enable them to serve as supervisors and trainers of college teachers.
>
> C refers to individuals who have completed comprehensive training in geographic education equivalent in course requirements, research experiences, and internships to a cognate major with sub-fields of geography as minor fields.

As a matter of fact, only one of the five program directors found himself in a position to try to foster development along all three paths within his program. He was David Hill, at Colorado. As Hill explains in his interpretive paper (see Appendix A), he went into the pilot year fully committed to the principle that "geographic education was to be a specialty [of the TLGG program] in which students might attain varying levels of knowledge, skill, and experience." In the paper he goes on to give reasons for his stand.

At the end of the year, he felt quite differently. His words of reconsideration were these:

> I propose that our TLGG program be re-oriented with a new organizing principle, namely, the Departmental requirement of and provision for systematic teacher preparation of every graduate student who plans to teach at the college level and who hopes to be recommended by this Department for such a position. This would not be a program for specialization in

> geographic education. Such opportunity would continue but would not be considered a purpose of the TLGG program. Students specializing in geographic education, such as Geographic Education Lab Coordinators, could serve along with other advanced students and faculty as supporting resources for the TLGG program. Thus, I am suggesting two separate but functionally related programs: (1) a TLGG program for all graduate students planning college teaching in the future, and (2) a program of specialization in geographic education.

What happened? Quite simply, Hill had found that the geographic education concept, with its tri-level differentiation, had seriously impaired the interests of the greatest number -- the "A-type" students. As he explains in his paper, he came to believe that some students were feeling threatened by the announcement of a hierarchy of roles, and that in any event he himself had been led to give his attention almost completely to the higher training levels.

To summarize, our limited experience suggests that *geographic education as the master frame for a program of teaching preparation should be approached with caution*. We of the project have not relinquished our belief that a new generation of leaders in geographic education may be expected to come from the ranks of the "A-type" graduates of TLGG programs, but a separation of training groups now appears to us to be desirable.

3. On Student Participation

Our year's experience encourages the belief that under normal conditions a program director should expect most of his trainees to be new teaching assistants. In part, this preponderance seems to arise from the uneasiness of local faculty members over the immediate teaching prospects of these fledglings. Thus, at Berkeley all new teaching assistants were required, by faculty agreement, to enroll in the first-term seminar, and at Illinois and Iowa they were strongly urged to do so (and nearly all did). Under varying conditions, these clients tended to stay with the programs through the year.

A no less important factor may be the lack of confidence in their own teaching ability among new teaching assistants themselves. Evidence to this effect was provided in our project by Colorado, where an entirely voluntary workshop on teaching problems was attended (during the time when participation held up at all well) almost entirely by new teaching assistants.

An exceptional situation existed at Clark, where the geography faculty had departed from the norms of American higher education in a number of respects before the appearance of TLGG. For one thing, they had come to accept the idea of group investigation by students. When the Clark director organized his TLGG effort, he assembled a cadre of students interested in a shared investigation of teaching and learning New TA's were not especially conspicuous in the makeup of the group.

We are tempted to make a second generalization about participation: the intrinsic rewards of teacher training, without supplementation, should not be expected to attract and hold students. All we really know is that in the one department where added inducements were not offered (Colorado), participation on a sustained basis was definitely low, whereas in other departments attendance was substantial at the beginning, and it held up or even grew through the year. In these departments academic credit was granted for the special courses taken. At

Illinois, fees were offered by the department as an alternative to credit for work-study assistance in the second half of the year. Members of the Clark cadre received a departmental stipend assigned to that group for the year.

Of course, argument from the Colorado experiment is weakened by the fact that the director, as a matter of policy (see preceding section), was diverting his own energies to higher levels of geographic education, delegating the leadership in teaching preparation to selected students.

4. On Intended Learner Outcomes

Perhaps it can be taken for granted that any director of a teaching preparation program will think about and talk about his program objectives in terms of learner outcomes. What seems much less certain is that he will have, in advance, a discriminating awareness of the spread of potential outcomes across the realms of thinking, doing, and feeling or "affect." To contribute to such an awareness we offer the following discussion, under subheads that refer to these dimensions of learning.

The Knowing Objective: To be Informed and Thoughtful

As one would expect, all TLGG programs aimed at an increase in knowledge and understanding on the part of the students. The typical seminar was meant primarily to familiarize them with at least a basic literature on curriculum, philosophies of education, alternative modes of instruction, and evaluation policies. Many of the mailings from the central office to the program directors were items that spoke to one or more of these points. There was basic agreement that we should try to move students toward an intellectual perspective on teaching.

For one program director -- Hill at Colorado -- the knowing objective was clearly an overriding aim. To say this is to get at the principle underlying his emphasis on the "higher levels" of geographic education. But there was more to his knowing-dominated conception of purpose than that: he was intent upon promoting the idea of teaching as problem-solving. Of the "A-type" student Hill said, at the beginning of the year, "/He/ is expected to learn to think about the structural nature of the educational process, how scientific analysis can be applied to that process, and what procedures may be appropriate. The objective is to equip the students to begin to operate in a problem-solving mode."

The Doing Objective: To Be Skillful

Almost everyone associates teacher training with skill-development or how-to-do-it exercises, and not unreasonably so, since the term "training" implies this sort of activity. Teaching preparation as sponsored by TLGG, however, while not neglecting this dimension, has not been typically skills-centered. The reason for this, we believe, is that the controlling concept of the TLGG mission -- teaching as responsibility for learning -- leads to a reduced concern for technique.

A rule that appears to have held for the year under review is that the closer a local program came to going along with traditional, "academic" conceptions of higher education, the more likely it was to approach teaching as a body of skills. At Illinois, adoption of the title "Improving Teaching Skills" for the lead-off seminar was meant to symbolize the receptivity of the program to locally prevailing values, and the content of the seminar did lean toward gaining ability to do specific things. (See interpretive paper for Illinois in Appendix A.)

At Berkeley, where acceptance of normal university values was probably at a maximum, skills orientation was most prominent. It was here that the observation of teaching -- including teaching by other students -- reached a height; furthermore, "Methods and Media" appeared as a session of major importance (in a conference sponsored by the program), and a pre- and post-course questionnaire featured an itemization of instructional skills. (See interpretive paper for Berkeley in Appendix A.)

The Feeling Objective: To Be Open

As the reader knows, TLGG had an immediate precursor, a "road show" project that operated through regional conferences. Those conferences, to quote from that project's report to the profession, were addressed to

> our classroom atmosphere (tense, relaxed, friendly), our classroom morale, and the general emotional climate. For example: What are the norms about us or our students expressing personal feelings concerning issues or people? How do we feel about being wrong or foolish? How do we make students feel if they are wrong or foolish?[1]

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[1] John M. Ball, et al., "Experiments in Teaching College Geography," p. 354.

Since in all cases the incentive for organizing TLGG programs was traceable at least in part to this project, one would expect a relatively well-developed concern for affective outcomes among the directors. Generally speaking, they were responsive to this inheritance, as can be confirmed in their interpretive papers (Appendix A). It took little or no persuasion for them to agree at a mid-year meeting that "relaxation of authority stance" should be cited as one of their shared objectives. In common with the "road shows," they plainly wanted to influence their students toward openness.

Certain points in some programs -- for example, the retreats at Colorado and Iowa, and the clinical portion of the seminar at Illinois -- can be identified as times when the affective dimension of teaching received special emphasis. But at Clark the feelings orientation was dominant. Under the guidance of Duane Knos, the move toward openness was given definition as a preference for forming learning communities, a readiness to support non-competitive learning, a directing of attention to problems of self-respect, a willingness to legitimize feelings of delight, a sensitivity for others' experience. A statement of conviction by Knos, written during this teaching period, is to be published elsewhere soon.[1]

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[1] Duane Knos, "On Learning," forthcoming as a chapter in a Pacesetter book on geographic curriculum development and teaching strategies, to be published by the National Council for Geographic Education and edited by Gary Manson and Merrill Ridd.

5. On the Management Model

From the beginning, we of TLGG have felt inducements to adopt a management model at all levels of our operation. This is to say, we have been aware of pressures for a systematization of procedures in which (a) objectives are stipulated in advance (ideally, at the program level, in the terms discussed in the preceding section), (b) means are devised for efficient achievement of these ends, and (c) an evaluation process is developed in which observed results are compared with intended results. All of the directors responded affirmatively to this demand to some extent, but one, Hill of Colorado, made an all-out attempt to comply.

Hill gave himself these directions (as he says in his interpretive paper):

> (1) assess the job for which the students are being trained, and (2) tell the students what is expected of them.

Accordingly, he took over from an earlier analyst (Frank Koen) six dimensions of college teaching, namely, content mastery, course design, management of learning skills, interpersonal communications, self-evaluation, and professionalization/socialization. And for each he produced a general statement of learning objectives, behaviorally expressed, which was communicated to his students. Further, Hill conceptualized his program as an array of twelve broadly defined activities, for each of which a contribution to at least one of the learning objectives was mapped out. All of this, as a plan, went into a syllabus. Evaluation later occurred as a built-in part of several of the activities. An overall in-progress evaluation took place in March, 1974, through more than seven hours of interviewing.

At the end of the year, when Hill looked back appraisingly, he had not lost confidence in the management model, as such. The leading point in his critique was that he had fallen short of the requirements of the model, (a) by failing to be specific enough in his statements of objective, and (b) by not having developed really systematic monitoring and evaluation of in-class teaching behavior. This reaction on Hill's part can be read as a lesson in itself. To it we would add two more.

First, to judge by Hill's experience, *a director openly enunciating the principles of the management model should expect to engender some unrest among his colleagues*. Hill came to realize that by promulgating his program in systematic, means-ends terms he had invited invidious comparisons between the presumed clear-headedness of his special field and the apparent amateurism of others. Quite aside from that, he was introducing something "sufficiently foreign," to quote him, "to have created troublesome cognitive dissonance." Many of his colleagues simply had difficulty assimilating what he was saying to them, given their own accustomed views.

Second, events at Colorado suggest that *a director vigorously implementing the management model should not be surprised to discover conflict within himself*. Hill felt he was in something of a dilemma, saying

> On its face, this looks to be the perennial conflict between directiveness and non-directiveness. How much direction can one give before one robs the student of choice, his opportunity to exercise his own responsibility and freedom to learn? On the other side of the coin: How much wasted time and resources can one accept in the course of encouraging a student to struggle with freedom and choice?

He was inclined to see his own directiveness as threatening what he termed "the open classroom principle," essentially the principle of self-reliance that by general acceptance ought to be at the heart of graduate school life.

6. On the Exploration Model

A counter-pressure within TLGG has also been felt, pushing for the right of directors to take a chance on indeterminacy. The desire expressed, generally speaking, has been for the adoption of an exploration model, wherein program members learn together during the time allotted, making discoveries as they go, not only about the nature of teaching but also about what they can believe in or emotionally accept as teaching preparation. All of the directors showed some signs of this alternative inclination, but one, Knos of Clark, developed an entire scheme of program organization according to the model.

By our reading (see Clark interpretive paper), two points of intent set Clark upon its exploration course:

(1) encourage group cooperation and sharing in learning, and
(2) [pursue] the dialectic of individuality and group consensus.

What one finds implied in these aims is a particular form of exploration, an inquiry conducted by a learning group. The cadre mentioned above in earlier sections looked upon itself as such a group. It proceeded under the guidance of Knos in the first half of the year, and under that of his co-director in the second.

As members of a learning group, the Clark students were producers whose job was to "construct learning experiences," to quote from a conversation with Knos at the end of the year. Their constructions -- often designs for teaching to be used in other learning groups (classes) -- began in about the eighth week of the year, being regarded by them as attempts "to translate some of the [then] emerging notions about learning and the nature of knowledge." Tryouts, revisions and more originations continued throughout the year.

From first to last, self-consultation was the rule. Where have we been? Where are we now? Where do we want to go? These were the dominant, recurring questions. In June, the group assembled to see what normative principles they could agree on concerning teaching and learning, and how they thought their collective "autobiography" related to these standards. It was a status check on the exploration. For the results the reader is referred again to the Clark paper.

There are two principle lessons to be drawn from Clark's experience with the exploration model, we believe. First, the director who believes deeply in teacher training through the instrumentality of the learning (exploring) group should be prepared for doubts from his fellow geographers. Although the Clark faculty may have been generally friendly to the Knos venture, as an earlier remark on their innovations would suggest, he had to put up with much less than complete trust from his co-disciplinarians in the national project, ourselves included. Cognitive dissonance was pronounced; and outright conflict arose whenever he, consistent with his convictions, proposed that the entire project organize itself as a community-in-formation, like his home group.

The second lesson is that teacher training as group exploration does not assure in itself exemption from a feeling among the students that they are being coerced. "Some students," the Clark paper notes, "worry about group learning becoming dictatorial and constraining." Because of the press for agreement that is inherent in the model, hearing of this worry is not altogether surprising.

7. On Sharing and Delegating Authority

If we may start with the assumption that the understandings upon which TLGG is based -- between the doctoral departments and the Association of American Geographers -- gave a significant amount of authority to each program director (or directorial pair), then a question of interest might be: what can be learned from the actions of the directors in (1) sharing their authority with other faculty members, and (2) delegating their authority to particular students?

From the year's experience with the first way of spreading responsibility, that of faculty sharing, we have gained the following impressions:

-That every director should plan on such spreading, if only to keep his own work load at a tolerable level. This assertion gives us a chance to say that we had only part-time directors, all of whom met their normal university obligations during the year. To illustrate this kind of sharing: at Illinois, six or more faculty members supervised student teaching projects; at Iowa, four professors supervised the TA activities that comprised the TLGG practicum; at both Illinois and Iowa, the orientation sessions were run in cooperation with other faculty; at Colorado, leadership of the principal seminar was shared.

-That the survivability of a program will almost certainly increase, with such spreading. Without naming specific programs, the one which appears to us most likely to keep going after external funding has ceased has the highest level of faculty participation; and the least likely, the lowest. Ignoring for the moment the possibility of some common underlying cause of these correlated conditions, we would point to the following necessary effects of participation: a greater awareness among local decision-makers of what TLGG is driving at; and a greater chance that faculty members other than the director will feel they have a personal stake in teaching preparation.

-That a risk is being taken: other faculty members cannot be depended upon to see teacher training the way the director does. As best we can see, there was some price paid in terms of program unity wherever faculty sharing occurred.

As to the second way of spreading responsibility, that of delegation to students, these are our suggestions:

-That students should serve as delegates only when close support and cooperation can be provided by the director or other qualified faculty. Reasons for this cautionary note come from instances this past year when students were left pretty much alone. We have in mind two programs where "senior mentors" found it difficult to function effectively without guidance, and a remarkable core group of students in a third program whose energy and inventiveness could not always compensate for their lack of background.

-That evaluation assignments be given especially serious consideration as jobs to be delegated. Stand-out performances by students as program contributors, across all five programs, tended to be instances of evaluation. Examples are evaluations of the orientation sessions at Illinois, Iowa and Colorado; development of questionnaires at Berkeley for an assessment not only of the local TLGG program, but also of a course on quantitative methods and of the whole instructional effort of the department; and the ongoing evaluation by students at Clark of their own progress.

At some point, we realize, the distinction between a delegated responsibility and an independent learning activity becomes almost impossible to make: the one merges into the other. As to independent learning activities taken in their own right one should realize that they were encouraged in all programs, comprising a major part of the practicum component. TLGG-type training probably could not be mounted without them.

Part Three. LEARNING FROM EXPERIENCES AT THE NATIONAL LEVEL

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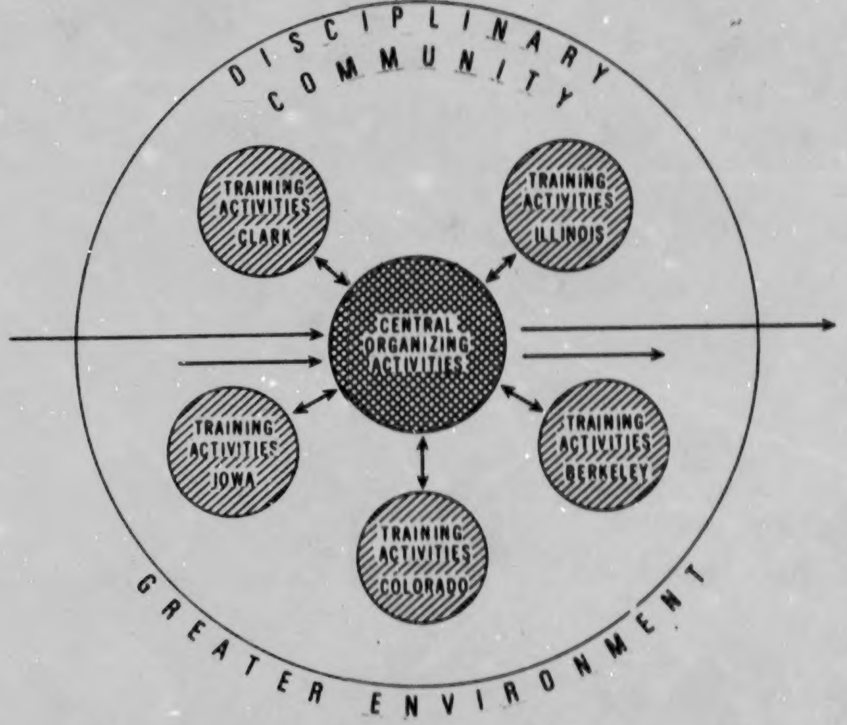
1. Introduction. 33
2. On Structuring the System 35
3. On Making the System Go 39

1. Introduction

The time has come to recognize the existence of something more than the training activities of the five programs. They are the central organizing activities carried on at (1) the office of the Association of American Geographers in Washington, D.C., (2) the national headquarters of TLGG, in Chicago, (3) meetings of the project's steering committee, and (4) conferences attended by the program directors. Taken together, they can be portrayed in relation to the whole of the project as follows:


DISCIPLINARY COMMUNITY
TRAINING ACTIVITIES CLARK
TRAINING ACTIVITIES ILLINOIS
CENTRAL ORGANIZING ACTIVITIES
TRAINING ACTIVITIES IOWA
TRAINING ACTIVITIES BERKELEY
TRAINING ACTIVITIES COLORADO
GREATER ENVIRONMENT

The reader will observe that, in this conception, TLGG is an operating system (a social, goal-oriented system), sustained by the exchanges (communications and transactions) symbolized by arrows.

The central organizing activities were conducted during

1973-74 mainly by these individuals: Saul Cohen (Professor, Clark University), L.D. Fink (Doctoral Student, University of Chicago), Gary Manson (Professor, Michigan State University), Salvatore Natoli (Educational Affairs Director, Association of American Geographers), and William D. Pattison (Professor, University of Chicago). Their participation was distributed as follows:

At office of the AAG:
    Natoli, assisted by others in the office, and functioning through co-option of Pattison and Fink, when required.

At headquarters of TLGG:
    Pattison (National Director) and Fink (Associate National Director), assisted by a part-time secretary, and functioning through co-option of Natoli, when required.

At Steering Committee meetings (of which there were four:
    Manson (Chairman), Cohen, Fink, Natoli, and Pattison.

At Project Conferences (of which there were three):
    Two or more of the above-named group of five (serving as conveners); joined by the program directors, at times, in decision making.

Our first general statement in the present part of this report is a recommendation to the organizers of any future project resembling TLGG in scope and purpose that the principles of small size and cross-membership illustrated by the group primarily charged with TLGG central activities be given a trial. We make the recommendation on the basis of the efficiency of communication and the economies in transportation and other cost items that were achieved during the year. We believe that no loss in accountability occurred and that the negative effects of reduced representativeness were negligible.

2. On Structuring the System

It appears to us now, looking back, that the central organizing activities of the year were two-fold: (1) those that served to structure the TLGG system and (2) those that facilitated operation of the system, or made it go, within the structure established. The former are described under the headings "defining," "regulating" and "planning," below. Our recommendation is that these three aspects of structuring be given explicit recognition from the beginning in any future project.

Defining

When the proposal for organizing TLGG was approved by the National Science Foundation, in the spring of 1973, the following objectives -- having been set forth in that document -- went into effect:

(1) an improved population of teachers at college and graduate levels,

(2) an array of developmentally conceived, self-sustaining programs in the teaching/learning arts for doctoral students,

(3) a leadership corps of geographers skilled in preparing others in the teaching/learning arts, and

(4) principled knowledge germane to the preparation of teachers in higher education.

But it soon became apparent that goal-defining could not stop there. Developments that followed were these:

Recognition of an overarching mission. First clearly suggested by the national director in a speech in April, 1973, contrasting TLGG with another NSF-sponsored enterprise, the Commission on College Geography. Finally resolved by the same person more than a year later in these words (repeated from Part One of the present report): "The mission of our project is to propogate among geographers the concept of teaching as responsibility for learning and to take the lead in putting that concept into action."

Clarification of the meaning of "improved population." At the third -- and last -- project conference of the year (at Boulder, in the beginning of February), the directors began to come to grips with this challenge. Press toward a formulation came from headquarters personnel, resulting in tentative agreement at that time on this particularization:

(a) growth in awareness of the significance of the teaching role, (b) enlargement of knowledge about the teaching/learning situation, (c) expansion of knowledge of teaching style and strategies, (d) increase of commitment to self-evaluation as an on-going process, (e) growth of confidence in the self as teacher, and (f) relaxation of authority stance.

Realization of the significance of the program thrust. Perhaps most important, along this line, was the stimulus received by the national director from a meeting of the directors of NSF-supported projects at Airlie House, Virginia, in mid-February. It induced in him a readiness to say that the programs had been organized "to foster an alternative philosophy of education among doctoral programs in geography in the United States. Challenging the generally accepted view that training for disciplinary command is sufficient for such programs, the project sponsors local pilot ventures in which a practice-oriented approach to problems of teaching becomes part of the preparation for the Ph.D. degree."[1]

Specification of membership in the "leadership corps." The exigencies of project management led the Steering Committee to identify, relatively early in the year, "three or more of the (current) program directors" as persons "exhibiting great potential as examplars and missionaries." This improvement on earlier, quite general designations allowed us to get on with a conceptualization of a second year for TLGG in which new directors would learn from old.

Determination of some guides to "principled knowledge." During the year, it was the chairman of the Steering Committee who kept the objective of producing principled knowledge in view. By the end of the year, enough discussion had taken place and enough response had come in from the field to make it possible for us, at the project headquarters, to generate the guidelines for program understanding presented in Part Two of the present report, and for project understanding in Part Three.

Regulating

Final authority for project policy has rested with the Steering Committee, as the part of the project that has represented the interests of the AAG and ultimately of the National

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[1] Individual project descriptions have been included in Proceedings, Project Directors Meeting, Airlie House, Virginia, February 10-12, 1974, published by Materials and Instructional Development Section, Division of Higher Education, National Science Foundation.

Science Foundation. Of the regulatory functions attached to that authority, perhaps the most important has been that of maintaining accountability, especially for the four charter objectives cited above, not to mention standards of performance implied by other declarations in the original proposal. The Steering Committee began to ask for reports from project headquarters at its second meeting, both on the headquarters itself and on the programs; and at the third (and most productive) Project Conference its members directly monitored the project as a whole. It was at this conference that the meaning of "improved population" received clarification, thus setting in motion evaluations that led to the self-accounting by program directors in their interpretive papers.

Allocation of available funds became a problem as the opening date of TLGG approached, since the total amount granted to the project was much less than what had been thought necessary. At its first meeting the Steering Committee authorized a formula for sharing the reduced sum that all programs later accepted.

As another function, the Committee assigned or confirmed roles in the project. Its action established the equal status of the several programs and of their directors, as well as stabilizing the relation of the programs to project headquarters. An early measure approved the exceptional role of the Teaching Preparation Program at UCLA -- already a going concern -- as "affiliated pilot" (see Appendix B).

And, too, the Steering Committee received for review the applications of doctoral departments for inclusion in Phase II of the project. Deliberations on their content, while having a regulatory result, were also part of the planning process, next to be noted.

Planning

The key member of the Steering Committee in all planning operations was the Educational Affairs Director of the AAG, whose drive toward tangible and practical outcomes served to hold the attention of the committee on the next step ahead. Responsibility for planning had been passed on to the committee from the

Commission for Geographic Education (COMGED), which had originated the project proposal. Planning in the restricted sense of adopting a charted course occurred at the first meeting of the committee. New charting began at the second meeting, when the probable state of the programs at the end of the 1973-74 period was projected. At this point, the need for an extension of effort into a second year was agreed upon and procedures for opening TLGG to an enlarged membership were worked out. The third meeting was devoted almost entirely to development of plans for a second year, based in large part on the applications received from new departments. Much of the fourth meeting -- held during the major project conference of the year -- was given over to discussion of those plans with the current project membership.

3. On Making the System Go

With all of the foregoing matters spoken of, we can turn at last to the claim made under "Historical Perspective on Our Response," that the type of project represented by TLGG has special merit as a source of support for the teaching preparation effort of any given academic department. That is, we are ready to specify the national activities beyond those required for structuring the project, the functions that are unequivocally mission-serving in nature.

These activities -- the ones that have made the TLGG system go by countering the tendencies of local enterprises toward isolation -- were promotive of (1) interaction among the programs, (2) interaction between the programs and the disciplinary community, and (3) interaction between the programs and the greater environment. The circles and arrows of the diagram presented on page 33 were drawn to assist in conceiving of the activities in these terms. To future project managers our recommendation is that this view of central functions be adopted as a guide in the development of project plans.

Interaction among the Programs

The program directors often commented during the year on the value to them of project-sponsored information flows, program to program. On the one hand, there were regulated transmissions, passing through the central office, and on the other, relatively free interchanges during the Project Conferences. In both instances, the inclusion of UCLA as a sixth training enterprise was of cardinal importance. This program, highly systematized and already in operation when TLGG began, as has been said, put more information into the interdepartmental exchange than any other.

To formalize the transmissions through project headquarters, an Internally Originated Item (IOI) Series was instituted, which had run to eleven issues by the end of the year. For titles and descriptions, the reader is referred to Appendix C. None of the listed items was solicited; all were passed through the screen of our judgment at project headquarters, as to suitability for the advancement of project objectives.

There were, to repeat, three Project Conferences during the year. Whereas all three were probably valued most by the central organizers for their structuring potential -- as occasions for affirmation of mission and assertion of accountability -- they were looked upon favorably by the directors, primarily as opportunities for speaking to and hearing from one another. The first time (in March, 1973), they were probably most interested in sharing impressions of goal; and the second and third times (in the following November and February), in a give-and-take on trainers' experiences.

Interaction between the Programs and the Disciplinary Community

Because of its design, as a branch of the society that represents the community of professional geographers, the TLGG could hardly have been better placed for promoting program-community interchange. The thing of great worth that TLGG brought in to the programs from the community was legitimacy, or recognized status. Thanks to project sponsorship, each director could regard his own actions as having, in a sense, national and official significance. For example, all programs and directors were identified by name in a special TLGG announcement at the opening of the AAG's Guide to Graduate Departments of Geography in the United States and Canada for 1973-74, and notices on them appeared from time to time in the AAG Newsletter. In addition, the project was represented by the directors at sessions of the annual meeting of the National Council for Geographic Education in the fall, and of the AAG in the spring. Also in the fall, two of the programs shared the platform at a regional meeting of the AAG.

What TLGG brought to the community from the programs was evidence on the basis of which other departments of geography could begin to form judgments. The question placed before this public was whether teacher training of the TLGG brand appeared feasible, and if so, whether it looked desirable. It must be admitted that the means for delivering evidence were relatively few and low in key, consisting almost solely of the presentations made at the meetings cited above. The central organizers might be faulted for this, but reflection suggests that they should not be: any more time and energy taken away from program development for the purpose of evidence-production would have been difficult to justify. (A full-dress report on the programs and the project, to be distributed throughout the profession, is planned for the end of Phase Two.)

Interaction between the Programs and the Greater Environment

To begin with what TLGG was able to bring to the programs from the greater environment, first mention must be made of the support of the National Science Foundation. Not only as a monetary subvention but also as a symbol of acceptance in honored circles, this backing was critical in "putting over" more than one program as something that a departmental chairman would be willing to authorize. To credit TLGG with attracting NSF's support seems not unreasonable, since it was the national impact possibilities of the project, which no local program acting alone could aspire to, that had much to do -- to the best of our knowledge -- with NSF's willingness to invest in teacher training by geographers.

The central organizers also brought in from sources beyond the geographic community important expressions of contemporary educational thought, particularly those pertaining to higher education. To be sure, in each case of transmission the materials concerned might have come to the attention of every director sooner or later anyway, but they could not have served as a basis for a growing common culture among the directors had we not intervened as we did. Most of the transmissions were sent out as items in the Externally Originated Item (EOI) Series, for a full listing of which the reader is referred to Appendix D. Some, though, came by way of IOI mailings, where the immediate author was a project member who had summarized or otherwise processed the thinking of outsiders. This was true of IOI #10, for example, "A Review of Recent Reports on Higher Education."

It should be said here that although we of the TLGG central organization passed on to our clients information about the Keller Plan for science instruction (via EOI #11), we refrained from any attempt during the year to align the TLGG programs with the school of thought with which it is most often associated. This school, as we understand it, holds that a revolution in education at all levels is "portended by developments in electronics, notably those involving the radio, television, tape recorder, and computer."[1] Our policy called for learning about this view, especially as it has been implemented in other NSF projects, and for planning appropriate action in Phase Two of our project.

In small measure, the central organizers sought to induce a positive attitude toward the programs among university personnel above the departmental level. This line of action was confined during the year almost altogether to a single letter sent to deans, emphasizing the exceptional character of the TLGG programs on their campuses, and encouraging an optimistic view of their future.

Now, to close: what has TLGG brought to the greater environment from the programs? We have brought news, or better, reports on performance from which non-geographers can draw conclusions as to the practicality and worth of what our people have been trying to do. Our addressees have been two, of which the first has been a new educational reform unit in a sister discipline, the Division of Educational Affairs of the American Political Science Association. We have kept them posted on the programs almost from the beginning. They in turn have already disseminated some of our information to political scientists through a feature story in the DEA News.[2]

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[1] The Fourth Revolution: Instructional Technology in Higher Education, A Report and Recommendations by the Carnegie Commission on Higher Education (New York: McGraw-Hill, 1972), p. 9.

[2] "Geographers and Economists Upgrade Teacher Training," DEA News (Winter, 1975), published by the Division of Educational Affairs of the American Political Science Association, p. 5.

Our second addressee has been our sponsor, the Materials and Instructional Development Section, Division of Higher Education, National Science Foundation. By informing this agency we have regarded ourselves as speaking to science education in the United States at large, and beyond that, to American society. Within three months of the opening of the academic year we were able to provide Dr. Withrow, of that section, with first-hand access to the program directors (as they discussed their experiences in the previously mentioned convention session of the National Council for Geographic Education, in Washington, D.C.). A few months later we forwarded a progress report, and now we are submitting this retrospective view of an entire year's work.

Appendix A

THE INTERPRETIVE PAPERS

1973-74

Page

University of California, Berkeley. . . A-2

Clark University. A-8

University of Colorado. A-14

University of Illinois. A-20

University of Iowa. A-32

AN EVALUATION OF THE BERKELEY SEGMENT OF THE TLGG PROJECT: 1973-1974

Dr. Robert Reed and Dr. Risa Palm, Project Directors

University of Califo
Department of
Teaching and Learning in Graduat

This evaluation of the University
of Geography Teaching and Learning in
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Participant Response to the Goal

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E BERKELEY SEGMENT OF
JECT: 1973-1974

r. Risa Palm, Project Directors

University of California, Berkeley
Department of Geography
Teaching and Learning in Graduate Geography Project Evaluation

This evaluation of the University of California, Berkeley, Department of Geography Teaching and Learning in Graduate Geography Project deals with the practical outcome of the activity of the past year in terms of three fundamental issues. The first of these considerations is in the effectiveness of the program in influencing a change in the attitudes of the participants accordant with the performance or behavioral objectives of the Berkeley project and the TLGG dimensions of desired change. The second element of this evaluation discusses projects developed by graduate student participants and the relationship of these projects to the overall aims of the TLGG program. The concluding portion of this evaluation focuses on institutionalization of the program

Participant Response to the Goals and Objectives of the Berkeley Project

In order to consider the effectiveness of the Berkeley program in influencing a change in attitude or performance of participants, information from a pre and post-program questionnaire was used as the data base. The analysis of individual attitudes, both prior to and upon completion of the Berkeley TLGG program, when aggregated and considered as a single summary statistic, is a measure of the impact of the program in its entirety and is not merely an assessment of the students as individuals. The question of change in the performance or attitudes of participants is of critical importance, for it is with this change in observable behavior or attitude that we may infer the existence of learning and a condition of expanded knowledge with respect to teaching and learning in geography. This distinction between learning and performance objectives may at first seem pedantic, however, since the process of learning proper is never actually observed (learning proper being an intracellular electro-chemical event) we have only the behavioral manifestations of these events as evidence of learning in conjunction with the directions of desired change.

The following are the goals and behavioral/performance objectives established for the Berkeley TLOG program.

Goals

1. To share teaching experiences and problems with others who are similarly involved, and to deal constructively with these.
2. To gain insights into one's own teaching practice and emerging style.
3. To keep abreast of significant issues which relate to college teaching, and to be informed on these.
4. To prepare for a future college teaching position.

Behavioral Objectives

At the end of this seminar each student should pose questions as to the following:

1. The awareness of his/her teaching strengths and abilities
2. The awareness of his/her shortcomings and the means for dealing with these.
3. The capability of obtaining feedback from significant others on his/her own teaching.
4. The awareness of differences between your own teaching style and practice and that of others. And the awareness of the plausible justifications for those differences such as differences in personality, subject matter, traditions, etc.
5. Expansion of range of teaching style and strategies.
6. Indicate some means of continuing contact with vital inputs applicable to your teaching interests so as to keep abreast.

The analysis of the change in the attitudes of participants with respect to these goals and objectives was accomplished by comparing the statistical mean responses to questions on a pre-project questionnaire with the mean responses for identical questions on a post-course questionnaire. The

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Pre-course response: (0) neutral/
Post-course response: (2) agree

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students responses ranged from a (-3), if the student was strongly disagreeing with a statement or an issue, a (0), if neutral or not sure, and a (3), in the case of strong agreement. An example of a typical question and the pre and post course response is:

Question: I presently have adequate skill in the use of the following instructional techniques to be a good college level teacher: self evaluation for teaching improvement.

Pre-course response: (0) neutral/not sure
Post-course response: (2) agree

Clearly it can be inferred that takingpart in the TLCC project aided participants in developing a relative awareness of self evaluation of teaching practices. The ability for the participant to undertake objective self analysis of his/her teaching practices is fundamental to achieving the desired change in attitude or awareness accordant with the previously stated goals and objectives. This change in awareness is not a claim that all or any of the participants have acquired an absolute competence or even major skill in meaningful self analysis, however, it is obvious that participants have advanced significantly in their awareness and confidence in this aspect of the teaching role.

Analysis of the data obtained from the pre and post course questionnaire provided evidence that over the course of the past academic year the participant had begun to evolve a carefully thoughtout "philosophy" of[1] teaching and learning which could be applied to college level instruction. Participants also indicated an increasing awareness of the major instructional problems and limitations which college level teachers face.

The experience of an expanded teaching role, in addition to sessions of group and individual evaluation of teaching from both fellow participants

[1] See Appendix One

and faculty, lead to an expansion in the range of teaching styles and strategies with the participants becoming increasingly more confident in their abilities. There were expressions of a feeling of a positive change in the ability to lecture and speak to large classes and a very strong positive change in the participants' perception of their ability to stimulate and conduct discussions and to direct one-to-one independent study programs. There was a similar growth in the awareness of the significance of the teachers role in developing individualized instruction and the evaluation of student learning. In association with the increasing knowledge of the teaching role, participants indicated that two of their urgent needs if teaching a geography class immediately after TLGG would be to become more aware of student problems and to develop a distinct teaching style. These latter two concerns are strong evidence that TLGG participants experience a tremendous growth in the "feeling" for what the teaching role is, that is, participants gained considerable insight as to the teaching/learning process from the standpoint of the teacher.

It is essential to state once again that it is not maintained that participants acquired an absolute proficiency in any one are, however, the expansion of knowledge and the awareness of problems is in itself quite significant. Participation in the Berkeley TLGG provided the vehicle which facilitated this increased awareness, an awareness which often is not acquired until the first teaching position, and has provided significant insights for those who intend to pursue a teaching career. This "early in the career" insight as to the roles and techniques used by teachers and learners is considered by participants to be of very real

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PARTICIPANT ORIGINATED
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advantage in the development of good college teachers and has provided TLGG participants with the feeling of an initial increased ability over non-TLGG prospective college teachers.

One area which the Berkeley program has had little effect in developing participant awareness or skills in in the use of programmed self instruction, teaching via audio-visual techniques and the media. It is felt that this failing was the result of exploring these techniques too quickly and without significant depth of coverage. This particular aspect of the program dealing with media and programmed instruction, will be expanded in the coming years.

PARTICIPANT ORIGINATED PROJECTS AS AN ELEMENT IN THE TLGG EVALUATION

A measure of the worth of any enterprise is reflected in the actions of the individuals involved. In order for the Berkeley TLGG project to persevere a large measure of student enthusiasm will be needed. If the activities of the participants in this past year's program are indicative, resourcefulness and a realization of the importance of teacher preparation programs will continue to be found in the Berkeley graduate student population. Insofar as this is not an evaluation of individual students but rather of the program in its entirety, only those student initiated activities which will be of an ongoing nature involving future TLGG participants will be discussed.

The participants of the Berkeley TLGG project are currently working on several projects which developed as spinoffs from the main TLGG structure. This summer graduate student and TLGG participant Alan Ritch will complete a departmental slide library. This unique "library" will house a collection of slides copied from the collections of the Berkeley faculty, as well as developed from other sources. This library will be a resource available to all in the university community and will be extensively utilized by TLGG participants as a source for visual materials to accompany their teaching. This resource will allow participants to expand their teaching styles to include slide presentation on virtually any subject area. Mr. Ritch received funding for this project from the university, however, the development of this excellent resource had as its point of inception the TLGG program.

A similar university grant will allow TLGG participant Christopher Exline to develop a course syllabus and independent learning sets for use in the quantitative methods course. This project will also include an assessment of undergraduate students attitudes toward quantitative techniques in both a pre and post course questionnaire.

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In each of these cases the resources developed from these grants will be available for use by next years TLGG participants. An important part of the assessment of instruction at Berkeley will come from a TLGG project by participant Lawrence Handley. Mr. Handley's sending questionnaires to recent graduates of the geography department in order to obtain an overview of the teaching and learning situation at Berkeley.

During the summer six of the participants in this past year's TLGG program will be working to organize the activities of the coming year. This planning involves developing a course program for 1974-75 and presentation of these ideas and suggestions to Professors Reed and Palm.

These activities are mentioned because each represents a spinoff

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THE TLGG CALIFORNIA GEOGRAP

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project from the 1973-1974 TLGG. Each of these projects will expand the range and scope of activities participants in the coming TLGG program may take part in. These spinoff activities reflect the essence of the TLGG program in 1973-1974 and are not reflective solely of the actions of a few isolated students, for without the TLGG program as a focal point it is doubtful if any of these other projects would have been developed.

THE TLGG CALIFORNIA GEOGRAPHY TEACHERS CONFERENCE

One of the fundamental concerns of the National TLGG program is with a multiplier or "snowball" effect, that is adding to the number of institutional TLGG programs throughout the country. Throughout the course of 1973-74 it became apparent that such a multiplier effect might be produced on an intra-state level, servicing master's degree candidates in California's nineteen state colleges, who would be seeking community college teaching positions. This "snowball" possibility when added to the desire to make California geographers aware of the Berkeley TLGG program was the impetus for holding a TLGG sponsored conference of geography teachers from throughout California (Nevada was also represented) in March of 1974. TLGG participants, other graduate students, and the Berkeley faculty combined to provide 140 geographers with an afternoon beginning with a luncheon (Professors Julian Wolpert, David Hooson, and James Parsons as speakers) followed by group workshop sessions, and concluding with wine and cheese at Professor Daniel Luten's home.

TLGG participants took an active role in serving as leaders of the afternoon workshop sessions. This role afforded students the opportunity to interact with those actually in the teaching profession and to begin to consider and formulate solutions to problems facing the practicing geography teachers. Virtually all of the University of California, California State College/University and one half of the California Community College campuses were represented at this meeting. Those who attended the conference offered support for an annual conference of this sort, dealing purely with problems of teaching and learning, to be held at various campuses throughout the state. The Berkeley TLGG student participants and faculty supervisors were commended for their leadership in bringing California Geography teachers together expressly to work on teaching problems. at the May 1974 meeting of the California Council for Geographic Education Annual Meeting, Bakersfield, California.

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INSTITUTIONALIZATION

The issue of the institutionalization (integration into the departmental permanent curriculum) of the TLGG program at Berkeley can not be considered until the completion of the 1974-1975 project. Although the current program is highly productive and perceived to be a success by all concerned, the fact that our graduate student population will double (25 to approximately 50) next year means that the acceptance of the project by these new students will be of critical importance if institutionalization is to take place. Institutionalization will be the result of expressed student interest and demonstrated student needs and will only come if the student population makes the faculty aware of the desire for the continuation of such a program. The 1974-75 TLGG project will largely determine if this ongoing student support will be generated. If the interest shown by participants during the 1973-74 TLGG

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CONCLUSIONS

In conclusion it can be said that the Berkeley TLGG Program was a success in influencing participants to become substantially involved in the consideration of various teaching techniques and the teaching role in general. This program provided no great background in educational theory but this was not our goal, we simply wanted to induce prospective teachers to ask critical questions regarding teaching and learning and to encourage self evaluation. These aims are reflected in the stated goals and objectives of the Berkeley program, and as has been demonstrated by the results of the pre and post course questionnaire, desired change in behavior and expansion of teaching strategies has taken place.

The projects which have originated as "spinoffs" from the TLGG will expand the range of activities open to next year's participants. The existence of these projects largely reflects the influence of the TLGG program on generating an interest and commitment to concerns of teaching and learning.

The program for next year will be expanded to allow for greater depth in coverage of certain types of teaching and evaluation techniques which were insufficiently covered during 1973-74. This program expansion will deal with the major criticism of the Berkeley program: attempting to accomplish too much in too short a time period.

The most vital question concerning the Berkeley TLGG program, that of institutionalization, can not be answered. If student interest continues to grow and participation is widespread next year, than institutionalization becomes a possibility. It will take the students communicating a desire for such a program to all members of the faculty in order for institutionalization to be considered. The question of whether the TLGG project becomes a part of the permanent Berkeley curriculum will be answered early in 1975.

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RANDOM SAMPLE OF STATISTICALLY S
THE PRE AND POST COURSE C

*Statistical
Question sam

Scale

Strongly Disagree	Disagree	Mildly Disagree	Neu Not
-3	-2	-1	

In order to learn subject matter, stud
like it.

I have personally evolved a carefully
"philosophy" of teaching and learning
in college level instruction.

I am currently aware of the major inst
problems and limitations which college
teachers face.

I presently have adequate skill in use
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good college level teacher:

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Developing individualized instruct

Evaluation of student learning

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APPENDIX ONE

RANDOM SAMPLE OF STATISTICALLY SIGNIFICANT RESPONSES TO THE PRE AND POST COURSE QUESTIONNAIRE*

*Statistical population-20
Question sample size-25%

Scale

Strongly Disagree	Disagree	Mildly Disagree	Neutral Not Sure	Mildly Agree	Agree	Strongly Agree
-3	-2	-1	0	+1	+2	+3

	PRE	POST
In order to learn subject matter, students must first like it.	0	+.8
I have personally evolved a carefully thought out "philosophy" of teaching and learning which I can apply in college level instruction.	-.4	+.3
I am currently aware of the major instructional problems and limitations which college level teachers face.	0	+.6
I presently have adequate skill in use of the following instructional techniques to be a good college level teacher:		
Lecturing and speaking to large classes	-.8	+.2
Stimulating and conducting discussions	+.5	+1.6
Directing independent student study	+.3	+1.5
Developing individualized instruction	-.3	+.6
Evaluation of student learning	-.2	.4
Self-evaluation and teaching improvement	0	+2.0
If I were teaching a geography class next quarter my most urgent needs would be:		
To become more aware of student problems	0	+1.1
To develop a distinct teaching style	0	+.8

Clark University TLGG* Evaluation Report

There are four essential steps in evaluating the Clark University TLGG Project.

1) a description of the program as it was developed during the year - to provide the essential parts of autobiography of the project,

2) a description of the normative model presenting the basic concepts that formed the substance of the program. Since the program had to do with teaching and learning, the substantive content of the project should give a base against which the program may be evaluated,

3) a comparison of the performance within the program with normative model to describe successes and short-comings of the project,

4) plans for next year as a result of what has been learned in the past.

The following, then, is a formulation of the structure, content, and performance of the project in terms of these four needs.

The Structure

The TLGG Program at Clark began with the eight student participants enrolled in a course entitled Geographic Ways of Knowing. All incoming graduate students were also enrolled in this course. The objectives of this course for both incoming graduate students and TLGG participants were to:

1) acquaint participants with the process of naming and metaphorizing as part and parcel of scientific activity,
2) encourage group cooperation and sharing in learning,
3) discuss the dialectic of individuality and group consensus, and
4) relate these issues to research and learning within the community of geographers.

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* Project on Teaching and Learning in Graduate Geography - a project of the Association of American Geographers supported by the National Science Foundation.

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After the first seven weeks of Geographic Ways of Knowing, the TLGG participants met in a group apart from the incoming graduate students. During the next seven weeks, participants began evaluating the activities of the first seven weeks and developing activities that attempted to translate some of the emerging notions about learning and the nature of knowledge into specific learning experiences.

During the winter intersession, there was one evaluation session of the Geographic Ways of Knowing course in which both the first year graduate students and TLGG fellows participated. This session focused on what individuals felt they had learned and how they had learned it. Further, it gave a forum for some participants to discuss their frustration with and insights into how the activities and games played in the course were related to the product and process of geography.

During the second semester, members of the TLGG program met with Irving Schwartz as individuals and in small groups for clinical sessions to discuss particular teaching experiences. Particular attention was payed to evaluation, one and two way communication, student-teacher roles, student-teacher satisfaction with laboratory situations and curriculum development.

During the second semester, also, all TLGG participants had specific practicum assignments. One participant taught a course at another college. Another was responsible for practicum in undergraduate education. Others served as teaching assistants within the School of Geography, while still others worked in a variety of curriculum projects.

Finally, during the summer, members of the TLGG group met to evaluate the entire year's experience and to articulate a set of ideas and understandings that were derived from the program. The normative model

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and future plans described below resulted from these discussions.

The Normative Model

The process of building the normative model was carried out through discussions among participants in the project during the month of June, 1974. The model consists of seven general principles that our participants feel to be of prime importance in the construction of learning experiences. They are not presented here in any special order of priority of importance, nor are they mutually exclusive. They do, however, represent a consensus of opinion as to the essential elements for maximum learning.

1) Learning experiences should emphasize non-competitive learning structures.

There has been considerable resistance to this unamended statement by a number of participants for it is felt that competition is a normal, healthy and interesting aspect of human experience. On the other hand, it was felt by all participants that in traditional classrooms there has been little emphasis upon cooperative techniques. Because of an emphasis upon personal achievement as reflected in grades, learning in school has usually been viewed as an individual enterprise. Cooperation has frequently been equated with cheating. As a result, learners in classrooms lose the powerful resources offered by their companions in the learning venture. Furthermore, continued comparison of one learner with the achievements of others tends to work to the disadvantage of those whose performance is less praiseworthy. Such students begin to define themselves as dumb. They are diminished in terms of their own self respect, and as a result, they drop out of the learning process with alarming frequency. For these reasons, all participants feel that structures should be developed in which skills of cooperative

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learning may be enhanced. This is not to say that competitiveness should be squashed. It simply says that cooperation in learning should be encouraged.

2) An important aspect of any learning situation pays attention to alternative ways of knowing.

This notion simply argues that teachers should seek to develop an ability to see alternative solutions to problems and alternative structures of knowledge. In one sense, this notion derives from the idea that learning is facilitated when constraining dogma is questioned and statements of alternative structures are encouraged. It has to do with the notion that creativity is enhanced when alternatives can be defined. Indeed, it is this creativity that all participants agree should be an integral part of any learning program.

3) A learning program should increase and legitimatize the feeling of delight that accompanies understanding or insight.

This idea seems to emerge from the personal experience of a majority of the participants in the project. In a traditional school system that emphasizes the seriousness of dogged pursuit of truth, that rewards diligent hard work and brings joy and delight within the purview of hedonism, the notion of a legitimate delight in learning seems to be a somewhat radical idea to which all participants are willing to subscribe. It is felt that it is this delight that becomes the powerful motivator for further learning and is requisite for developing the drive and desire to learn.

4) Students should complete the learning experience with a sense of competence -- a confidence on one's own ability for self-actuated learning.

Few students are able to withstand the frustration of coming to know the unknown gripped by the fear that their efforts are likely to end in failure. Confidence in one's ability to learn, along with the expectation of delight that comes with understanding, becomes a strong motive for continued learning activity. Consequently, participants feel that teachers should consciously seek ways to help students develop their own sense of competence -- their own self-respect -- as an integral part of their teaching strategies.

5) A learning program should develop skills in the communication of not only rational ideas but emotional states as well.

The communication skills required, of course, includes the ability to convey one's ideas clearly with sensitivity for other's experience and structure of knowing. In addition, the art of listening, holding in abeyance one's own predilections and attempting aggressively to understand another's position is of first importance. Finally, an ability to give feedback, not only in the form of criticisms of ideas, but in terms of the process of communication is also included among these skills. These elements are, of course, essentials in any two-way communication system, and while most members of the group place some considerable importance on one-way communication skills (e.g. lecturing), all support the notion that two-way communication is a powerful tool in the process of learning.

Another aspect of communication skills has to do with skill in asking questions. To ask questions, to refine such questions as solutions develop, and state them in the context of another's experience so that they might be better understood is an intellectual skill of great importance. It is taken here as a skill that should be consciously pursued in the act of teaching.

6) There are subject matter objectives that must be defined by the teacher as he constructs learning experiences.

It is fair to say that most of our participants agree to disagree on what the subject matter content should be in any given course. All would agree, however, that the criteria for what the course content should be should

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include that it be intellectually honest, non-trivial and useful as a media for the intellectual development of the learner.

7) A learning program should help develop skills in group learning - the development of a learning community.

The development of a community of learners is seen by most participants as an important way to enrich the menu of resources available to individual students. Such a community enhances the likelihood that alternative ideas may be introduced into the process. It provides a forum for criticism and evaluation of ideas, and it makes possible a division of labor that promises to increase the volume and variety of external sources of ideas and information that may become part of the experience. While some participants, worry about group learning becoming dictatorial and constraining, a community that recognizes the power of individuals becomes an important objective in any learning program.

These seven principles, then, may be taken as a statement of the specific objectives of the TLGG project at Clark and as such becomes the normative model against which the events of the program may be compared in judging its worth.

The Evaluation

This section consists of a personal statement authored by Marc Eichen, a participant. It was written in consultation with a number of other participants and has been reviewed and approved by all people who were involved. Marc's evaluation follows:

The normative model we have built for TLGG consists, as I understand it, of seven parts. We would like people in the TLGG project (and in the core course here at Clark) to experience: (1) a non-competitive learning situation, (2) the possibility of alternative ways of knowing, (3) delight in knowing something, (4) the feeling of competence, rather than arrogance, in knowing, (5) an increased facility with communication skills, (6) some agreed upon content, i.e., what we know as geography, and (7) develop skills in group learning. I will try, in the paper to follow, to assess and give examples as to "where we're at" regarding each of these seven normative criteria.

There seem to be two perspectives as to whether or not the TLGG did encourage a non-competitive learning situation. For myself, I felt very at ease and non-competitive. There seemed to be a relaxed atmosphere in the core course and that extended to sessions outside of class. I am comparing this to my experience in England where no one told anyone what they were doing for fear of plagiarism. I am also comparing this with my other experiences in the core course as an intro to Graduate Geography at Clark. Perhaps my feeling of non-competitiveness is also partially due to my position as a third year graduate student. I was not one of the people who just arrived at Clark. I knew the rules and the ropes, while those people in the core course here for the first time did not have the knowledge. The second perspective on the non-competitive criteria emphasizes the newness of the situation and the resulting intrinsic competitiveness. This is associated with the strangeness of a new environment for incoming graduate students. In a strange situation where success plus a positive self image are important, participants tend to be self conscious in their attempts to establish themselves. This was the case initially in the core course. For most participants in the core course (TLGG members included), however, the situation became less competitive as the course progressed. This was mentioned particularly in the evaluation sessions at the end of the course (January) and during the following summer.

The ability to see alternative ways of knowing was partially successful. The use of the "Schwartz Boxes" was an exploration in seeing alternatives

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and reaching a consensus. This was useful for me, but I think less useful to others. I had the feeling during that meeting that members of the class were alternatively confused and bored. People were unsure "what the hell this was all about", or "were we not illustrating an obvious point". While the point is obvious (people do and should have the opportunity to see things in different ways) it is one which I must learn over and over. Thus, I found the exercise useful.

Throughout the course I felt the delight in learning something. Yet, the feedback I was getting from others indicated they were feeling confusion and anger rather than delight. In the evaluation session during January, members of the course said they did indeed feel somewhat elated at learning something which they believed to be important. That came as a pleasant shock (it felt good).

More than perhaps any other objective, I sense people felt some competence rather than arrogance. This competence was due partially to knowing and partially to realizing that you, like everyone else, didn't know very much. In this the core course was a great leveler. Everyone felt equally confused and thus when the confusion lifted they saw the sense that it lifted through group effort. This was particularly the case after people read Bronowski and Kuhn. Things started to make sense. Things made sense, collectively.

It is difficult for me to assess to what degree people's communications skills were improved. If nothing else, the mere being together improved the ability and willingness to speak and listen with one another. Yet I wonder to what extent this would carry over to other situations and with other people. There are ways of overtly teaching communication skills and if that is what we are after we could use these methods, e.g. listening without speaking, repeat-ing the other's message, criteria for giving good feedback, and so on. If we define the content as what we know to be "hard core" geography than only the sessions which introduced the faculty provided this content. If, however, we see the content as the five aforementioned normative criteria then entire course, and perhaps the entire year, focused on such content.

More generally, I felt a coming together of the graduate students in many important and real ways. People, perhaps for the first time in years, are playing together and drinking together. There is a sense of group worth and a sense of either "making it together or not making it at all." This, it seems to me is an extremely important offshoot directly related to the core course experience (in the January evaluation session this was particularly mentioned and attributed to the core course). This sense of community is evidenced not only by being together but also by working together. More now than at any time I can remember, people are finding others with common interests and working with them on problems of mutual import. While it is particularly difficult to say whether this sense of community will continue throughout the graduate experience and then after, it is a large and meaningful step in the right direction.

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The Future

One of the things that derives from the foregoing is that during this past year's project we dealt primarily with the nature of learning and the problems of knowledge in a somewhat abstract and indirect manner. That is, we dealt with the concepts as concepts developing them through various media such as games, simulations, reading assignments and discussions. Each concept was somewhat disconnected although there was an attempt to put things together as we went along. Through our discussions it was felt that the

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The question selected can be
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teaching and learning may be obtained
on an academic career? (2) Why did
decide to come to Clark?

Secondly, the question impl
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opportunity to find unity in the conceptual content of teaching and learning could be improved upon in future programs. It was felt that next year's program should get at essentially the same notions in essentially the same structure, except that the program be developed around a single specific question. That question must have implications for teaching and learning, must be autobiographical in the sense that it is personally relevant to each student, and that it should lead to the development of skills in communication and community development.

The question selected can be stated somewhat crudely perhaps in the following manner. How does a student evaluate himself in terms of where he has been, where he is, and where he wants to go. In one sense this process is integral throughout a student's graduate career. The question implies a development in each individual's learning of a structure of knowing, a sense of the process of coming to know, and a sense of problem of what may be. It implies a series of questions which, if dealt with on an individual level, gives practice in a number of the learning skills implied in the normative model. The question would have each individual deal autobiographically with his own experience, his past training, and its effect upon his understanding of geography, his own value sets, his sense of competency. It implies the writing of his specific autobiography -- events in his life which have meaning. Specific questions may derive from this activity from which data useful in considering the art of teaching and learning may be obtained. For example: (1) Why did I decide on an academic career? (2) Why did I decide on geography? (3) Why did I decide to come to Clark?

Secondly, the question implies an evaluation of Clark -- its resources (e.g. libraries, support hardware, faculty, other students, atmosphere of freedom, a sense of community). Consideration of this kind of an evaluation opens up areas of developing ways to utilize resources, to develop community building skills, to learn how to plumb resources within the environment.

And, third, it implies dealing with the nature of expectations and how goals are derived and changed as learning progresses. Within this context, we would hope to deal with problems of creativity, the pursuit and structuring of knowledge, and the implications of these insights in the construction of learning experiences for others.

We would expect that the foregoing would serve multiple purposes. One, we would expect that the program would start a student on his graduate career, aware of his own place in the community of learners and to see his learning as developmental process over which he has some control. Secondly, we see the sharing of those considerations as opening up vistas to the nature of learning which may be exploited in the development of teaching practice. Finally, the personalization of the problem is expected to give a base for the internalization of the content principles of the program as expressed in the norminative model, and in addition to be an intrinsic part in the development of the Clark learning community.

In short we would ask incoming students and TLGG graduate students who are at a second or third year level to deal with the question of evaluation from both the personal and group context. The burden of structured and non-structured interviews and questionnaires will be a heavy one. Current graduate students, faculty, students who have been at Clark and have left, and students who were accepted at Clark and went elsewhere will be involved. Faculty perception of faculty, student perception of faculty, faculty perception of students, student perception of other students and faculty perception of other faculty are complex and sometimes threatening areas in which to delve. Yet these are

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While self learning will to

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Students Interests

Marc Eichen - Political
Myrna Breitbart - Social
Michael Godkin - Social
Elliot Wessler - Physical & Resources
Gary Kessler - Development
Farron Vogel - Development & Agricultu
Bill Renwick - Physical & Environment
Ken Gelman - Urban & Social

Paul Oberg - undecided
Sisca Vierstra - Geographic Education

Faculty Involved

Duane Knos
Saul B. Cohen
Irving Schwartz

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basic to a genuine assessment by the individual of his own expectations, needs and capacities in the context of the characteristics of that system known as an innovative department.

While self learning will be the major goal of this activity, part of the results are expected to be put into publishable form to promote the process of group learning.

Students Interests	1974-75 Assignments
Marc Eichen - Political	Research Fellow
Myrna Breitbart - Social	Instructor - (on campus - off campus)
Michael Godkin - Social	Teaching Assistant
Elliot Hessler - Physical & Resources	Teaching Assistant
Gary Kessler - Development	Research Fellow
Farron Vogel - Development & Agriculture	Research Fellow
Bill Renwick - Physical & Environment	Teaching Assistant
Ken Gelman - Urban & Social	Research Fellow
Paul Oberg - undecided	Teaching Assistant
Sisca Vierstra - Geographic Education	---------

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THE COLORADO PROJECT ON TEACHING AND LEARNING IN GRADUATE GEOGRAPHY IN TRANSITION

by

A. David Hill

April, 1974

In the Introduction to a description of the Colorado Project on Teaching and Learning in Graduate Geography (TLGG), I wrote:

> . . .As geographers we presume to address geographic problems scientifically. We also need to learn to apply our analytical skills to the problem of systematic teacher preparation because we see the responsibility of teacher training resting directly on us. It is clear that we have much to learn about this problem and, as with the geographic problems with which we commonly deal, we know we must expect trial and error before we arrive at a workable design. Thus, we present this program design as our initial hypothesis, our first approximation to a solution.
>
> "The University of Colorado Department of Geography Program in Geographic Education," July 1, 1973.

If those words constitute more than customary disclaimer, then our initial program design and its assumptions must be re-examined in the light of our experience with the program. Thus, the purpose of this paper is to critique, with the benefit of seven months' experience directing our program, certain assumptions and design elements described in the July, 1973, statement. The paper does not exhaust all that should be said about our program, e.g., it does not include all evidence of "successes" or "failures," nor the activities and experience of individual participants. Rather, its scope is limited to reflections on some problems of cognitive dissonance encountered with the introduction of this new program and certain shortcomings in its operation. Finally, a few changes are suggested.

The Original Design Principles

The Organizing Principle

In the July statement, I said systematic training in geographic education was to be an integral part of the Department's graduate program. The organizing principle held that geographic education was to be a specialty in which students might attain varying levels of knowledge, skill, and experience in the processes of teaching and learning geography. (This was the distinguishing feature of the Colorado program. None of the other four original TLGG program designs emphasized geographic education as a specialty.) Underlying our organizing principle were the following three assumptions.

Fitness to an Existing Departmental Struc
Innovation, I thought its acceptance woul
its design was compatible with existing D
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on which to be examined in his Comprehens
accommodate any acceptable sub-field. Fo
have joined the Department, it has been c
research interests as also appropriate fo
Thus, the Department has added variety to
geographic education a specialty, this fi
the competence of one or more of the facu
has long been included on the AAG special

Fitness to the Interest and Competence of
geographic education could be considered
At least four faculty members--Beyer, Hel
professional engagement with this sub-fie
figures in the AAG's High School Geograph
imenting with alternative instructional
on geographic education. None of us had
Helburn, Beyer and I had named this as on
section in the AAG Guide to Graduate Depa
direct graduate students who sought train
competent to do so.

Fitness to Roles Within Sub-Fields.--The
underlying the principle of levels of sp

> For any given sub-field or specialty
> identify types of persons fitting a
> or leadership. There are those who
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> less formal training; (2) those who
> special training to teach courses
> and (3) those recognized leaders in
> the higher the level of graduate tr
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Our design then applidd that assumption
as follows:

Figure

Training Level	Roles and Functions fo
0	To do professional geo
1	To be academic geograp training in geographi
2	To be academic geogra
3	To be academic geogra GE (Type 3)

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GROGRAPHY IN TRANSITION

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vid Hill

, 1974

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Fitness to an Existing Departmental Structure.--Since the TLGG program was an innovation, I thought its acceptance would rest partly upon the degree to which its design was compatible with existing Departmental structures. In our Department, the Ph.D. student is required to offer three specialties, or sub-fields, on which to be examined in his Comprehensives. This requirement could presumably accommodate any acceptable sub-field. For example, when new faculty members have joined the Department, it has been customary to view their teaching and research interests as also appropriate for graduate students to specialize in. Thus, the Department has added variety to its graduate offerings. By declaring geographic education a specialty, this field was recognized as lying within the competence of one or more of the faculty. (Of course, "Educational Geography" has long been included on the AAG specialty list.)

Fitness to the Interest and Competence of the Faculty.--It seemed defensible that geographic education could be considered one of the specialties of the Department. At least four faculty members--Beyer, Helburn, White and myself--had demonstrated professional engagement with this sub-field. Both Helburn and White were key figures in the AAG's High School Geography Project. Beyer and I had been experimenting with alternative instructional models and had been reading and publishing on geographic education. None of us had formal schooling as educationists, but Helburn, Beyer and I had named this as one of our specialties in the Department's section in the AAG Guide to Graduate Departments of Geography. We wanted to direct graduate students who sought training in geographic education and we felt competent to do so.

Fitness to Roles Within Sub-Fields.--The program statement gave the assumption underlying the principle of levels of specialization:

> For any given sub-field or specialty of a discipline, one can identify types of persons fitting a structure of levels of expertise or leadership. There are those who (1) have a basic familiarity with the specialty, either through one or two graduate courses or through less formal training; (2) those who have sufficient interest and special training to teach courses and so research in that specialty; and (3) those recognized leaders in the specialty. We assume that the higher the level of graduate training achieved in the specialty, the higher the probability of achieving leadership in that specialty.

Our design then applied that assumption to the geographic education specialty, as follows:

Figure 1

Training Level	Roles and Functions for which Training is Designated
0	To do professional geographic work without any teaching (Type 0)
1	To be academic geographers with a standard amount of systematic training in geographic education (Type 1)
2	To be academic geographers with a specialty in GE (Type 2)
3	To be academic geographers with a leadership specialty in GE (Type 3)

To summarize, the program's organizing principle asserted that: (1) an existing Departmental structure could accommodate additional graduate specialties, (2) geographic education could be such an addition because it was both long recognized by the AAG and was within the interest and competence of one or more of the Department's faculty, and (3) as in any other recognized sub-field, a student could attain varying levels of specialization and expertise in geographic education.

The Behavioral Principal

Having stated the intention to prepare graduate students to fulfill increasingly specialized roles and functions within geographic education, the design then described Frank Koen's six dimensions of college teaching, namely, content mastery, course design, management of learning skills, interpersonal communications, self-evaluation, and professionalization/socialization. Our statement described "General Behavioral Objectives" corresponding to each of the six dimensions (Fig. 2).

Figure 2

Training Dimensions	General Behavioral Objectives
1. Content Mastery	The student will be able to demonstrate his* knowledge of the subject matter of geography at the level demanded by the Department's faculty, and will be able to articulate the relevance of the subject matter to students, self, and society.
2. Course Design	The student will demonstrate his ability to organize the subject matter, to design and plan a geography course, to establish instructional objectives, to prepare advanced organizers for these such as syllabi, etc.; and will be able to articulate supportable rationales.
3. Management of Learning Skills	The student will demonstrate his effectiveness using a variety of presentation skills and his command of a wide range and flexible repertoire of teaching strategies and will be able to articulate supportable rationales for their use.
4. Interpersonal Communications	The student will demonstrate ability in using interpersonal communications skill and will be able to articulate supportable rationales for its use.
5. Self-Evaluation	The student will demonstrate his ability to systematically evaluate his own teaching effectiveness.
6. Professionalization/ Socialization	The student will demonstrate his knowledge of institutional practices, familiarity with structures and functions of professional organizations and societies, his ability to articulate explicitly his personal educational philosophy, etc.

*here, and throughout the remainder of this document, please read "his or her" wherever "his" appears.

The program was designed to train st
sions according to the principle that the
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(Figure 3).

Figure

GE Training Level	Degree of
0	Each entering graduate s option of working in a 2
1	Approximately 2 semester mensions with both theo candidate offers 3 depa exam other than in GE, graphy, etc.
2	Approximately 4 semeste mensions with both theo offered as 1 of 3 speci sertation is in one of
3	Approximately 4 to 6 se training dimensions wit ences. GE is offered hensives and dissertati

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* A "semester of preparation" means so
the specialty during a semester, e.g.,
might be combined during the same seme
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Our behavioral principle had the
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What is it that college geography teac
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The program was designed to train students in all six of the above dimensions according to the principle that the depth and degree of training experience with all dimensions would increase by training levels. Relating this concept to the Department's Ph.D. program requirement of three specialties yielded the following expectations of levels of commitment, involvement, and competency (Figure 3).

Figure 3

GE Training Level	Degree of Commitment and Specialization
0	Each entering graduate student will, in Geography 501, have the option of working in a 2-3 week unit in GE.
1	Approximately 2 semesters* of preparation in all 6 training dimensions with both theoretical and applied experiences. Ph.D. candidate offers 3 departmental specialties for comprehensive exam other than in GE, e.g., quantitative methods, urban geography, etc.
2	Approximately 4 semesters* of preparation in all 6 training dimensions with both theoretical and applied experiences, GE is offered as 1 of 3 specialties for Ph.D. comprehensives, but dissertation is in one of the other 2.
3	Approximately 4 to 6 semesters* of preparation in all 6 GE training dimensions with both theoretical and applied experiences. GE is offered as 1 of 3 specialties for Ph.D. comprehensives and dissertation is in GE.

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* A "semester of preparation" means some but not total commitment of time on the specialty during a semester, e.g., a practicum experience, such as a TA ship, might be combined during the same semester with work in other departmental specialties.

Our behavioral principle had the following underlying assumptions. Assess the Job for Which You Are Training Students.--We tried to answer the question: What is it that college geography teachers should know and what should they be prepared to do? In March, 1972, the Department's faculty and graduate students generated a set of items in response to this question. Other sets were developed in Kansas City at an AAG workshop in April,1972, to which the Department sent a team of three. Frank Koen, a staff member for that workshop, had in previous research and writing provided an inclusive categorization of these sets, and it seemed appropriate to use his "six dimensions."

Tell Learners What is Expected of Them.--An assessment of the functions for which training is intended suggests that one might be able to describe some things a student should be able to do in order to demonstrate that he is ready to perform those functions. Furthermore, the literature on behavioral (also performance or instructional) objectives stresses the importance to the learner and teacher of knowing in advance what outcomes are expected from the instructional program. The instructor must have a clear idea of his instructional objectives before he can design a course of instruction that can efficiently produce the intended outcomes.

The student learns best when he understands in advance not only what is expected of him but also why and how those expectations have been formulated. Behavioral objectives also aid the student in deciding whether or not he wishes to commit his time and effort to the program. Also, they may serve the student and instructor in judging where they are in an instructional sequence. Too, they may help in diagnosing strengths and weaknesses of both students and the program. Finally, they help to eliminate the chance that the student will be judged on arbitrary and hidden criteria.

The behavioral principle simply avows the importance of goal-setting. When properly practiced, goals are stated in such a way (carefully described behaviors) that one knows when one has attained them. This principle cautions against the condition that "if you don't know where you're going, any road will take you there."

The Open Classroom Principle

Twelve "program activities" were described in our statement. These were available courses, teaching opportunities, and other suggestions to the student of resources and mechanisms which they might use. The list was not meant to preclude additional activities, and no sequence was required, although some activities were deemed more appropriate than others for advanced or beginning students. The statement read:

> . . .[The activities] are designed to offer the student opportunities to experience, during his graduate training, greater responsibility and autonomy, and to be progressively rewarded as well--to allow him to move from beginner to professional status. The activities reflect the philosophy of individualization, i.e., no single set or sequence of activities will be prescribed for all students--it is likely that no two students will follow precisely the same program. . .

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The phrase "open-classroom" is, of course, used metaphorically here, since the program is not a single course but rather consists of learnings in many courses and non-classroom situations. The phrase was not used in the program description, but it does nevertheless carry certain intentions that were implicit in the design, as mentioned below.

Encourage Individualization.--Each student has a distinct set of needs, abilities, and experiences. Some may have already had considerable teaching experience, while others have had none. Some may have read more widely in the area than others. A student's program should be carefully designed to meet his considered needs and abilities. No single set of sequenced requirements would be ideal for all students.

Encourage Student Choice.--To be able to choose, the student must be cognizant of a set of available options. By experiencing choice, he both increases his abilities to make choices and is more likely to be motivated to pursue the line chosen because he made the decision. By encouraging student choice, the faculty is saying, in effect, we trust you to make good choices; this message, in turn, tells the student he is worthy. The feeling of self-worth is crucial to one's learning ability.

Encourage Growth and Development.--Indiv
but may not be sufficient for the open c
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Encourage Growth and Development.--Individualization and choice are necessary but may not be sufficient for the open classroom, since it is conceivable that they may operate without challenging the student to move to higher plateaus of learning, autonomy, and responsibility. The student may be presumed to provide his own internal motivation for and monitoring of his progress. However, he may also overestimate or underestimate his readiness to move on. It is the responsibility of the faculty to help the student diagnose his progress and to properly encourage him.

I have said that the open-classroom principle means the encouragement of individualization, student choice, and personal growth and development. A program based on this principle will allow students freedom to learn in ways that are best-suited to their individual capacities and needs and will develop, through the achieving experience, a sense of self-worth.

Another principle should be mentioned, and I have left it for the end because it applied to both the behavioral and the open-classroom principles. It is simply the old adage: "Practice what you preach." Translation: Your program should *model what you consider to be important and positive characteristics of good geographic education.* If one considers, for example, the careful explication of learning objectives to be an important element of good teaching, then a program to prepare teachers should emphasize this in its design. If open-classroom principles are judged conducive to learning, then these principles should be applied and practiced by the teacher preparation program. If the student has experienced the operation of such principles, he is more likely to transfer them into his own teaching on the basis of his own critical examinations of them.

Critique

Don't expect everybody to follow your logic and interests! Self-evident? Yes. But I think that sentence should be emblazoned in gold above the desks of every TLGG program director. I have been reminded of it every day for the past seven months. It is so easy to fall in love with one's own ideas and so difficult to face the fact that others are not equally enamoured with them. Project directors must live with some cognitive dissonance, but must also seek to reduce it.

Take the case of the organizing principle. Recall that it states that geographic education was to be viewed as a specialty in which students might attain varying levels of expertise. I'm not certain that students have accepted or rejected it. But I do have more reservations about it now than I did when I was first designing the program. I'll try to state some hunches stemming from these reservations.

Hierarchies, When Explicit, are Threatening.--Have sociologists been troubled by this hypothesis? Figure 1 gives an explicit hierarchy of levels of expertise in geographic education. At least one graduate student expressed to me discomfort that some students would be classed above some others with this schema. I suppose it is possible that some people who feel threatened by the hierarchy might reject the entire concept of geographic education as a viable specialty.

By doing so they need not rationalize their own lack of attainment in the area, since they have "explained" it out of existence. But, because we are dealing with teaching competence, this is very difficult to do. I extend this point with another hunch.

Additional and Unexpected Demands Will Be Resisted.--Consider first that the TLGG program is new. Graduate students entering the Department didn't expect it. Consider, too, that most Ph.D. students plan careers as teachers, or at least entertain the possibility. Conventional wisdom has held that traditional research training for a Ph.D. has been (at least) satisfactory teacher preparation. Now, however, at least some geography faculty members are saying that traditional training is not sufficient. They are contending, rather, that graduate students must now learn and do more than they once did in order to prepare themselves to be good teachers. There is also a growing awareness that teaching competence is being increasingly emphasized by those who hire, promote, and give salary increases. The scenario might be: "If I want an academic position and I'm a graduate student from a department that has a special teacher-preparation program, how do I rationalize to prospective employers the fact that I'm not involved in it? Even though the geographic education program isn't required, conditions are such that it is tantamount to a requirement. More to do. More hassle! Maybe if I close my eyes, it will all go away!"

The "Level 1" Students Deserve More Attention.--A few students have come to our Department because they wish to specialize in geographic education, and a few have decided while here to focus in this area. These students, primarily the Geographic Education Lab Coordinators, have received the most attention from me and, I suppose, have derived the most benefit from the program. They have usually acted as links, especially in our "TA Workshop", between the project director and most of the other students. I have viewed their roles as both "trainees" and as "peer teachers," the latter conceived as practicum for the former. I still think this is a productive model, but something else is needed, I believe, to make it work better. Because our TLGG design recognizes the higher levels of specialization in geographic education (Levels 2 and 3), and because those students working at these levels have greater contact with me, a feeling probably exists that other students are not really part of the program. Indeed, I do not think the program is serving as it should the Level 1 students. To succeed, our program must achieve a wider impact among the graduate student body. All graduate students planning teaching careers must see that the program offers something important to them and that the Department faculty expects them to become involved in it. That this condition has not yet developed is attributable, I think, to both the dissonant viewpoints on the organizing principle and the actual inadequacies of the program's operation thus far.

Before suggesting corrective action, let me continue this critique by looking at the behavioral principle. Here again, I focus both on the problem of cognitive dissonance and on shortcomings in operationalizing the principle.

The Uniqueness of the Behavioral Principle.--In the Introduction to the program description, I said:

> . . .Systematic preparation for college geography teaching is essential, especially because a large number of geography Ph.D.s become teachers at the college level. It is commonly known, however, that *typical graduate training so stresses systematic mastery of the content of the*

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> *discipline* that relatively little emphasis is given to systematic mastery *of theory* and practice in teaching, the process that occupies most of the graduates' subsequent professional time. . . (Emphasis added.)

I am now less sanguine about the phrase emphasized above than I was seven months ago, although my original intention was more an attempt to show contrasting emphases than to suggest that "typical graduate training" was truly systematic. Within this Department, our geographic education program statement is unique--there exists for no other sub-field a document that attempts to serve as a syllabus for students. Although faculty responsible for these sub-fields may have in their heads clearly-defined expectations for student performance, one cannot find these in writing. Thus, if systematic training programs exist in these sub-fields, the faculty have not taken the pains to write out for students and faculty what they are. The fact that they have not might be evidence that many geographers are not cognizant of some important concepts in teaching and learning, such as the desirability of providing careful specifications of objectives. We typically do not state clearly for students, even in individual courses, expected outcomes and levels of proficiency in measurable (behavioral) terms. Since there is little or no readily accessible evidence of the operation of the behavioral principle in the other sub-fields in the Department, I suggest that the geographic education program statement, with its "general behavioral objectives," has been sufficiently foreign to most faculty and students to have created troublesome cognitive dissonance. Saul Alinsky cautions the change agent: "Don't go outside the experience of your people." It is good advice.

The Need to Operationalize the Behavioral Principle.--We have evidence, albeit mainly unobtrusive, that the program has broadened some peoples' awareness of the complexities of teaching and learning and has increased their commitments to become more proficient in this realm. But we need much more refined indicators of growth and development than we now have. In stating expectations for students in the program description, there is a notable hedge in calling them *"general* behavioral objectives." Frankly, when the statement was written I was not prepared to be any more specific. I now regret that. The very generality of our stated objectives might have been more a hindrance than a help. Perhaps objectives threaten when they are so general that the student can't conceive of them in a concrete, experiential mode. For example, I wrote in the program statement that "the program is designed to train students in all six of the . . . dimensions according to the principle that the depth and degree of training experience with all dimensions will increase by training levels." But depth and degree were only defined in terms of a student's time devoted to working on the objectives and of his degree of commitment to the specialty (figure 3). Depth and degree were not defined in functional terms, i.e., specific learnings sequentially and developmentally conceived. Just as disturbing to me now is the original notion that advancement to higher levels of the specialty was simply to be a matter of increasing concentration in the six dimensions. I now think that additional dimensions should be specified for the higher levels. The six dimensions are probably sufficient to the needs of the Level 1 student, i.e., every graduate student who plans a teaching career. But it now seems essential to develop a carefully structured set of behavioral objectives for each of the dimensions that lend themselves to this process.

The need to operationalize the behavioral principle struck me particularly during the course of over seven hours of private, indepth interviews with graduate students in March, 1974. The interviewing was prompted by a decision of the Boulder conference of TLGG representatives held in February, 1974, which called for formative (in progress) evaluation of each pilot project. We were urged to look for evidence of individual change, or movement, along several dimensions, including:

(a) Growth in awareness of the significance of the teaching role;
(b) Enlargement of knowledge about the teaching/learning situation;
(c) Expansion in range of teaching styles and strategies;
(d) Increase in commitment to self-evaluation as an ongoing process;
(e) Growth of confidence in the self as teacher; and
(f) Relaxation of authority stance.

These dimensions, similar to our own "general behavioral objectives," are too general in their present form to enable one to identify change with much precision. In the interviews, I found students to be unable to identify specific learnings without considerable prompting. Unless one can specify indicators of change along dimensions, one is left with only a vague feeling about development or the lack of it. We will need to develop or be able to identify precise behavioral surrogates for certain dimensions to help us measure change, because without some measurable evidence we may be left holding on to little else but a set of platitudes. (I am not, however, suggesting that all important dimensions are susceptible to behavioral treatment.)

Finally, I have a comment or two about the open-classroom principle, especially as I have identified it with our program activities. The original statement is most guilty of pretension on the point suggesting we have devised "systematic training." The program activities do not constitute a truly systematic program. They are, rather, suggested opportunities or components with which one might construct and achieve a systematic--developmental and inclusive--preparation for teaching. In the spirit of the open-classroom principle, I have felt responsible to encourage self-styled, individualized programs, but perhaps have been over-zealous with the principle. I have not, I think, provided enough direction for most students in this matter.

Part of the problem lies with the aforementioned need to operationalize the behavioral principle. But the greater dilemma may derive from the apparent contradiction between the behavioral and the open-classroom principles. On its face, this looks to be the perennial conflict between directiveness and non-directiveness. How much direction can one give before one robs the student of choice, his opportunity to exercise his own responsibility and freedom to learn? On the other side of the coin: How much wasted time and resources can one accept in the course of encouraging a student to struggle with freedom and choice? Some teachers seem to have come down on one or the other side of this dilemma, but I have not.

One might argue that a person who cannot cope with the open-classroom principle does not belong in graduate school, but I fear that to act on that suggestion

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would eliminate many students, some of whom can and will eventually develop these important qualities. As so much educational research has shown, some students thrive in the open classroom and some do not. I'm afraid our educational system is such that this is still true at the graduate level.

Suggestions for Change

Based on the foregoing review, I propose that our TLGG program be re-oriented with a new organizing principle, namely, the Departmental requirement of and provision for systematic teacher preparation of every graduate student who plans to teach at the college level and who hopes to be recommended by this Department for such a position. This would not be a program for specialization in geographic education. Such opportunity would continue but would not be considered a purpose of the TLGG program. Students specializing in geographic education, such as Geographic Education Lab Coordinators, could serve along with other advanced students and faculty as supporting resources for the TLGG program. Thus, I am suggesting two separate but functionally related programs: (1) a TLGG program for all graduate students planning college teaching in the future, and (2) a program of specialization in geographic education. Leaving for another time the elaboration of the latter program, I will confine my remaining suggestions here to the TLGG program, since it would reach a larger number of students and would require Departmental policy decision and wide faculty support.

Under the proposed TLGG program, it would be the Department's responsibility to provide students opportunities for acquiring at least a year's teaching experience that is systematically monitored and evaluated. The Department should make every effort to assure that each student serves at least one semester as a Teaching Assistant; where that proves impossible, other vehicles to gain teaching experience should be developed. No Teaching Assistant or Associate would be free of the responsibility for having his teaching evaluated.

In order to provide organization, guidance, and resources to students for observation and analysis of and feedback on their teaching, whether TAs, Associates, or some other form, it is suggested that a Teaching Workshop be conducted each semester. The Workshop would hold periodic meetings and all Departmental TAs and Associates would be expected to participate. The Workshop would serve generally as a forum for interaction on questions of teaching and learning, and it would act specifically to introduce concepts and instruments on classroom and teacher observation and analysis and would organize students, perhaps into pairs or trios, for a systematic and regular peer monitoring. Each student would be expected to gain experience both as a monitor and as a teacher being monitored. Advanced students might be paired with beginning teachers for certain purposes. Faculty-student teams might also be used, although published reports of faculty monitoring students suggest that those situations are sometimes hindered by excessive threat to the student. We might also seek resources to conduct videotaping of teaching, which has proved to be a powerful tool for teacher preparation when used judiciously. In sum, the suggested Teaching Workshop would provide the group base for the functioning of the teaching practicum of graduate students.

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It may be necessary to conduct a separate Teaching Workshop for those students hired to teach in Denver, but every effort should be made to centralize this function in Boulder both to try to overcome the fractionalization we face by our separateness and to make the most efficient use of our resources. (In any event, the Department should seek to reduce discrepancies in the teaching loads of graduate students between Denver and Boulder, since these appear to be a source of irritation causing low morale among graduate students.)

The TLGG program should supplement the teaching practicum with other resources designed to help the student prepare himself to teach. For example, we should explore the idea of self-contained training materials, essentially packets designed to enable the student to focus on specified behavioral objectives without dependence on an actual classroom situation. References to this concept are only now beginning to appear in the literature. If we decide to prodeed with this idea, the program should seek out whatever resources are available, but it is likely that we will need to spend considerable time and effort in our own development of such materials. The Geographic Education Lab is a resource that is already established with books, pamphlets, articles, course syllabi, student activities, simulations, hardware, and the like. Retreats, orientations, and other activities should continue to be fostered by the program. The most important resource, however, is a committed and helping group of faculty members.

If these suggestions for change are judged favorably, we should begin immediately to incorporate them in a new syllabus for our TLGG program. Then we can start a new round of "hypothesis-testing."

A-20

TEACHING AND LEARNING IN GRADUATE GEOGRAPHY

AN ASSESSMENT OF THE TRAINING PROGRAM AT THE UNIVERSITY OF ILLINOIS, 1973-74

Janice Monk
Local Project Director
June, 1974

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NG IN GRADUATE GEOGRAPHY

THE TRAINING PROGRAM
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In preparing a paper on the T.L.G.G. project at Illinois, I have two objectives in mind. The first, which will dominate, is to analyze the experiences of the year with a view to identifying changes which may be needed in a continuing program. The second is to see what generalizations can be derived from this analysis which might be of value to others concerned with training programs. The task is a difficult one because the evidence is fragmentary and expressed subjectively, and we have no base data on the participants from which to measure change.

The format of the report will be to deal first with the general assumptions underlying the program design, then to examine each of the program components. I will outline the goals of each component, describe the transactions which occurred, then attempt to assess whether and how the program component contributed to the participant's development as a teacher. This will be followed by speculations about potential program improvements. The concluding section will be an attempt to extract generalizations from the analysis.

Assumptions Underlying the Program

A number of assumptions were stated in the original program proposal, the most important of which are listed below.

1) The program will have to build on and be compatible with departmental structures and style.

2) Individual participants will have different needs, expectations, experiences and capacities. The program should take account of these differences.

3) The program should include experiental and analytical components.

4) The program should include experience in a variety of teaching situations at several levels, not only in introductory courses.

The Orientation Program[1]

The orientation program was an established activity at the University of Illinois, initiated in 1967 and directed by a senior faculty member. Because the orientation director was comfortable with the existing format, and the program had been well received in the past, the only modifications made in the previous design were to accomodate time constraints posed by a new, early-starting university calendar.

The objectives of the orientation program were as follows:

1) to acquaint the new teaching assistant with the teacher's role in the classroom;

2) to stimulate thought about developing one's individual teaching style;

3) to acquaint new students with each other, the department, their role in the department, departmental facilities, and to help assimilate students into the academic community;

4) to review, discuss and practice a selection of teaching strategies.

The program was conducted on campus over a four-day period in the week prior to classes. Participants included all new teaching assistants who were paid $50 honoraria for their attendance. Activities were highly structured. The week began with one day of lectures on topics such as roles and attitudes of the teacher, problems in student motivation, common teaching difficulties, lecturing techniques, and grading problems. The following days were devoted

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[1] A more detailed report on participant reactions to this component has been made by David Becker, (see 101 5c).

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to practice sessions in which participants gave short lectures, led brief discussions and prepared quizzes. Their presentations were critiqued by the faculty member and their fellow students. Decisions on topics and assignments were made by the faculty member, though students could develop their own presentation styles. The last half day was devoted to an informal session at which participants could raise questions about the department, their roles, etc.

Evaluations prepared by the participants suggest that some cognitive learning occurred. For example, through practice sessions they learned of the need to clarify themes in a lecture presentation and to consider how to stimulate student interest. They indicated appreciation of the applied nature of the program stressing their relief that the orientation was not heavy with educational theory and jargon.

Although the bulk of the program time stressed cognitive learning, gains in the affective area were probably of more consequence. Participants felt that the program helped them to face their teaching with more confidence than they expected to have, and it heightened their self-awareness as teachers.

Participant assessments thus indicate that the orientation program, as conducted, led to some progress on at least three of the dimensions of change associated with T.L.G.G. objectives. There was a growth in awareness of the significance of the teaching role, an enlargement of knowledge about the teaching/learning situation, and a growth of confidence in the self as teacher.

Although I do not expect that a one-week program can induce a great deal of growth, nor contribute to development in all areas desired, it does seem to me that more could be achieved and that the program needs modification.

As the program is structured now, one faculty member carries prime responsibility and sessions are devoted to practicing traditional teaching styles. Strong arguments can be made for continuing this arrangement. The growth in self-confidence expressed by participants seems to be fostered by the spirit developed as a member of a small group. It would be difficult to engender this spirit if more faculty were involved in practice sessions with each faculty person having only a transitory encounter with the participants. Likewise, practicing familiar teaching modes such as lecturing makes it easier for the participants to develop confidence than if they were expected to experiment with less familiar styles.

However, the existing format means that only one role model and a traditional style of teaching will predominate in the orientation program. My view of T.L.G.G. goals is that we would like the participants to experiment with varying models and to develop a personal style. To convey this message about the program requires that the orientation sessions present a variety of models and teaching styles.

Progress toward this goal might be made by adding new components to the program. These could simultaneously meet other needs which participants have expressed. Participants

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Seminar: Improving

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would like more help in planning for the tasks they will confront in their first week of classes and they also want more opportunities to meet with the faculty with whom they will be teaching. Sessions to deal with these needs can be developed outside the time devoted to teaching practice. These additional sessions can then be used to provide some variety of models in teaching styles.

Seminar: Improving Teaching Skills

In the fall semester I organized a seminar, "Improving Teaching Skills" which seven new teaching assistants took for credit and two others (one a senior teaching assistant) audited. A tenth student participated as course recorder.

The general goals of the seminar were oriented to skill development and increasing the participants' self-confidence and self-awareness as teachers. As expressed to the students, these objectives called for development in the following directions:

1) you will come to view teaching as a form of on-going research, that is, formulating problems, selecting and applying appropriate techniques, analyzing data and evaluating results;

2) you will develop enough confidence to experiment in the classroom;

3) you will develop greater self-awareness of your strengths and weaknesses as a teacher so that you can begin to maximize the former and minimize the latter;

4) you will develop greater appreciation for the contributions and needs of students.

These objectives correspond approximately to those developed in Boulder as dimensions of change desired in T.L.G.G. program clients.

The seminar was divided into two separate one-hour sessions. The first was devoted to introducing new materials in a moderately structured format, with the objective of providing a basis for skill development. The second was designed as a semi-clinical period in which students would discuss current teaching/learning concerns from their experience, either as teachers or as students in graduate courses. In addition, this hour was used to review assignments, teaching materials, videotapes etc. which the students had completed. It was hoped to contribute in this session to a supportive atmosphere for developing self-awareness and self-confidence as a teacher and to romote learning by sharing experiences.

The rationale underlying the division into two separate periods was that it might be desirable to separate the structured and unstructured learning situations, partly to insure that both areas would receive regular attention, and partly because the likely shifts in atmosphere might be more easily handled that way. It would also ensure that "systematic thinking about teaching" would not be restricted to one day a week!

In the structured sessions I introduced the topics listed below. They originated from a set of questions I outlined which was expanded by the students at the first group meeting.

1. Meeting a new class (What do you know about your students? How can you find out? What do they need from you?)

2. Instructional resources on campu

3. Formulating objectives (curricul

4. Test preparation (the multiple c
preparing items)

5. Varieties of exams (essays, oral
how? Problems of construction and gradin

6. Diagnostic evaluation of teacher

7. Discussion leading (strategies
questions in the classroom; analyzing qu

8. Alternative instructional techn
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9. Preparing laboratory exercises.

10. Finding a teaching style (some
role model etc.)

11. Self-evaluation.

In the clinical sessions many of th
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atmosphere; preparing laboratory activi
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In terms of the University's stand
seminar was rated as follows:

Course Content		Ins
Percentage responses		
Excellent	13	
Very good	50	
Good	30	
Fair	0	
Poor	0	
Very poor	0	

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you know about your students? How can
you?)

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2. Instructional resources on campus.
3. Formulating objectives (curriculum, course, activity)
4. Test preparation (the multiple choice test: categorizing objectives, preparing items)
5. Varieties of exams (essays, orals, take-homes, practical: when? how? Problems of construction and grading.)
6. Diagnostic evaluation of teacher (soliciting feed-back from students)
7. Discussion leading (strategies for stimulating discussion; asking questions in the classroom; analyzing questioning styles.)
8. Alternative instructional techniques (games, role-playing, audio-visual tutorial techniques, field exercises.)
9. Preparing laboratory exercises.
10. Finding a teaching style (some teaching roles--facilitator, expert, role model etc.)
11. Self-evaluation.

In the clinical sessions many of the same topics recurred. Issues included discussion leading problems; teaching assistant/faculty relationships; dealing with students, especially questions of valuing students; creating classroom atmosphere; preparing laboratory activities; examination and grading problems; and observations in the classroom, including videotape review.

In terms of the University's standard course rating instrument, the seminar was rated as follows:

Percentage responses	Course Content	Instructor	Overall Evaluation
Excellent	13	50	13
Very good	50	50	63
Good	30	0	13
Fair	0	0	13
Poor	0	0	0
Very poor	0	0	0

Other evaluation data which can be reviewed include the notes of the course recorder on transactions and discussion topics, transcripts of interviews with participants conducted by the Office of Instructional Resources, self-evaluations written by participants on their own strengths and weaknesses and my own observations on the seminar, teaching materials prepared and participant behavior during the first semester and subsequently.

The recorder's notes bear out my own impression and that conveyed in several of the interviews--that although we covered a multitude of topics in an informal and relaxed atmosphere, the discussion was not as spirited and lively as we would have wished. Several reasons were suggested by participants for this circumstance. The general morale of new graduate students in the department was not good in the first semester. Some had personal adjustment problems. All were taking a research course in which the principal instructor bore heavily on them and offered much negative criticism but little support. In addition, three of the participants were assisting in a course for which the two faculty supervisors seemed to have different objectives and the teaching assistants needed clearer guidance.

In the seminar itself students did not seem able to cope with the degree of self-direction which I hoped they would assume. For example, they could not make a decision on whether the seminar should be graded on a satisfacotry/unsatisfactory basis, or for a letter grade. I wanted them to make this decision as an exercise in considering grading problems. They seemed to see this as a ground rule I should set. The same problem arose with videotaping of their teaching. I wanted them to tape if they felt prepared to cope with self-confrontation. Only three chose to do so, but others commented in interviews they would have if I had made them.

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Some commented that their lack of drive may have stemmed partly from the grading circumstances. The likelihood that an S/U grade would be used (as it eventually was) meant that they did not feel compelled to put out the effort demanded in their other courses. Nevertheless, they felt that S/U grading was appropriate for a course of this kind.

The relative lack of structure also was in strong contrast to the participants' other experiences--in the orientation program, other classes and past experience. Although they appreciated the informality and the instructor being "off the pedestal", the transition to a less directive style of teaching seemed too hard for some to make.

In terms of content, the formal sessions mentioned as most useful were on those as testing-evaluation and objectives, although the treatment of objectives was thought too protracted. The clinical opportunity was generally appreciated. The atmosphere was apparently supportive. Some expressed the sense that they missed the class in the next semester, even though they sometimes begrudged meeting at the time. Some indicated they had tried ideas gained in the seminar in their classes. In self-evaluations, others indicated they would have liked to experiment more in their teaching, but still lacked the confidence. In general, confidence building was mentioned in the interviews as one of the strongest gains from the seminar.

In terms of the dimensions of change formulated in Boulder, movement seems to have occurred in at least the first five of the dimensions. How much movement is hard to specify. We do not know much about where each participant stood at the beginning of the semester. Some participants moved further than others, both in terms of their cognitive learning and in their development of confidence and concern for the importance of teaching.

The degree of movement in relation to a relaxation of authority stance is much more difficult to gauge. Participants reacted against the authoritarian styles of some faculty, but expressed need for a more directive style and more prodding from me. How they translated these reactions into their own behavior is an unknown. We have not collected sufficient evidence to make a clear interpretation. There are some relevant comments in the self evaluations and in responses to the question. "What advice would you give a new teaching assistant?"

A few of these comments are quoted below:

"It seems teaching is a two-way learning situation. Not only will the student gain from the educational experience, but so will the teacher."

"I believe in student involvement in the classroom as a means of achieving two-way communication."

"I lack enough authority in the class to get them to do some of the details I think should be done---"

"The new T.A. should not come down excessively heavily on his new students. He should show them he or she is boss in the classroom but not come on as the all knowing master of the subject."

"---I feel I have a strong grasp of the subject matter, but the possibility of giving incorrect answers still bothers me."

"---I need to realize my ability for being assertive. I find I must make a concerted effort to raise evaluation questions, rather than answering questions directly, as the students may wish. In this respect I have only been fairly effective."

A-25

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In terms of my own reactions to the seminar, there are several additional points I think worth mentioning. With some students, it seemed exceedingly difficult to induce a shift in focus from a disciplinary or teacher-centered model towards the student. This was apparent in a number of ways. When three mentioned they were not happy with the layout in their laboratory, I suggested they rearrange it to their own design. They moved small clusters of chairs and tables into long rows facing front (although angled slightly in a V) so that "they could see all the students and the students could see the teacher at the front". Assignments asking for behavioral objectives would be brought in with phrases such as "to elicit thought about--", that is, described more in terms of teacher than student behavior. A laboratory "activity" written near the end of the semester by one student for seminar discussion read like a lecture outline. Several of us could not seem to get through to him that he had not developed anything for the student to do.[1]

One of the difficulties in the clinical sessions was the greater readiness to discuss examples of teaching problems exhibited by the faculty, rather than participants'personal problems. While we derived some useful discussion from these examples, and one can expect some inhibitions, progress might have greater if more discussion had been personal.

An aspect of the seminar composition which had both advantages and disadvantages was that participants were teaching in five separate courses. One advantage was that a range of intructional situations was encountered, the disadvantage that some participants were not as familiar with, and interested in the problems their fellows were encountering. Nor was their ability to offer mutual assistance quite as great. Because three participants were in one course which had a number of difficulties, especially in the first half of the semester, their concerns and negative feelings dominated more than I would have wished.

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[1] It was something of a surprise to me that this participant wrote in a self evaluation that he had begun to think about teaching in new ways in the seminar and had tried some new ideas in class. I was under the impression he hadn't taken in much at all

In writing about the seminar, I may have stressed negative reactions over positive. This does not mean that our general reaction was negative. Rather, the difficulties are emphasized because this allows me to focus on identifying areas where change might be appropriate. Before dealing with these changes, I should list a few of the features which I think ought not to be changed. First, a condition for participation was that students be teaching concurrently. While this may mean some future teachers are ineligible (though we normally require at least one semester of teaching from all doctoral candidates), I have found from earlier experience that the student not teaching is not an effective contributor to discussions, and cannot carry out meaningful assignments. There is a much greater relevance to the seminar when the participant is teaching concurrently. Second, the size of the seminar group (eleven including the recorder and myself) was about appropriate. In a group smaller than, say eight people, we might not have had a sufficiently wide range of tasks or experiences to compare; larger than about a dozen and the discussion of personal reactions might have been more inhibited. Third, the division into two separate periods seemed appropriate. Unstructured discussion for more than an hour at a time would, I think, have been difficult to sustain. On the other hand, it would have been tempting to the instructor to extend the formal presentations beyond an hour, at the expense of the clinical time, had that option been available.

A-26

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time, had that option been available.

I now wish to deal with the question of change and consider how I might treat the seminar next year. The heterogeneity of the group is likely to continue, and must be handled. Advantages might be maximized and disadvantages minimized by trying some of the following approaches. Responsibility for discussion leading could be rotated more systematically so that assistants from one course or other do not dominate. Or the seminar might be divided into mutual-assistance sub-groups to work on problems in particular courses. Another approach might be to give more individual guidance, and to attempt to obtain greater involvement from faculty members with whom participants are teaching.

The question of grading policy will continue to be difficult, but the satisfactory/unsatisfactory approach seems appropriate and less threatening when one wishes to encourage discussion of personal experiences. Developing individual agreements on tasks to be completed to earn the satisfactory grade, early in the semester, would be one way around the problem of lack of drive encountered this year.

Coupled with a contract arrangement, should be a more directive approach on my part, with preparation of a fairly firm seminar outline within the first couple of weeks. I do not wish to be locked into an immutable structure, without capacity to react to changing perceptions of need. However, the students do seem to require more secure directions than I asserted this year. Along with a greater sensitivity to need for direction, I think I should make a systematic attempt early in the semester to assess the participants capacity for self-direction.

The topic of early assessment leads me to another need--to identify where participants are at the beginning of the program, so that evaluation of change during the program can be made more reliably. I have begun to search for ways of pretesting to handle this task.

Coping with morale problems created by conditions external to the seminar is a more difficult, though possibly recurring hazard, even if the form changes. It is hard to pose a general solution in advance other than the obvious of trying to achieve better communication---how remains a question.

Individual Teaching Options

In the second semester graduate students were offered a series of options to teach in advanced courses in varying capacities. There were several reasons for including this element in the program. It allowed students with different degrees of experience, ability and interest in teaching to undertake tasks which they considered appropriate. It permitted students who could not be involved in the previous seminar to be included. It established a vehicle for using more of the faculty in T.L.G.G. activities, and finally, it gave students the chance to work in upper division courses, and with individual undergraduate students on a basis which normally would not have been available. This extension of opportunity seems especially important, for it gave students access to teaching in the various kinds classes they will handle as faculty.

The announcements of the options available in Semester II are included as Appendix I. All faculty in the department during the semester were prepared to co-operate, and as the program functioned, all but two were involved. The projects undertaken ranged widely in scope, from presentations of series of guest lectures, to supervision of undergraduate independent research, planning and helping to lead field courses or classes, developing laboratory activities and teaching in advanced technique courses, and developing and using various instructional materials from simulation games

A-27

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to an audio-visual package. Two students team-taught an entire seminar course for senior undergraduates. Another prepared course outlines for two courses he will teach at the U.S. Military Academy next year. In all, thirteen students undertook twenty-nine separate activities.

In designing their projects, students consulted with me and the relevant faculty members, prepared a statement of their intentions, the time commitment anticipated and how they expected to be evaluated. Seven of the students elected to receive consultant fees for part or all of their projects ($900 was allocated for this purpose). Academic credit was awarded for the remainder, with the student choosing whether this would be for a letter grade or satsifactory/unsatisfactory.

When the projects involved work in the classroom, arrangements were made for at least one, and usually two or three participating graduate students to act as observers and provide critiques. Faculty reactions were also sought in these cases, and for the other projects such as the field course. In a few cases participants prepared portfolios of their materials with student and self-evaluations.

We originally planned to have open review sessions, probably off-campus, at the end of the semester, at which participants would discuss their experiences and learning with other members of the department. Time pressure made this impossible, but we have scheduled two evenings, part of the department's informal summer "colloquium at home" series, to discuss some of the projects. This will be the first time that teaching concerns have been dealt with in the summer series.

It is difficult to evaluate how these projects have contributed to the participants' development. Obviously some contain more potential for growth than others. There is some indication of increasing skills and self-awareness. For one student, his second series of lectures was rated as markedly superior to his first, in terms of timing, clarity, and suitability for the class. He felt happier and so did the observers. Those who prepared new strengths and weaknesses statements, were more specific and revealing in their diagnoses of problems. Some indicated a desire for further challenges, and expressed a gain in confidence to face such challenges.

Collective, as well as individual learning occurred, primarily about our needs, and we began work on some new problems. Procedures for evaluating teaching assistants for continuing departmental support came up for discussion. Several students worked together to produce new evaluation questionnaires in alternative forms which were reviewed by others and used at the end of semester. They are now being tabulated and reviewed as instruments. Another project was to define other variables than student evaluations which should enter into T.A. assessment and to develop pilot procedures for taking them into account in the evaluation.

In the process of observing their peers in the classroom, students learned that they were unsure of observation techniques and began seeking better procedures both for data collection and providing feedback. Further work on this project needs to be done, and training in observation might well be added as a program component next year.

A few problems were encountered in conducting the second semester program. It was difficult for me to maintain a desirable level of association with all the students and their projects. It happened that I had two other courses to teach, one a large class, the other an experimental one, and an especially heavy
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Reflection on the second semester's
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experimental one, and an especially heavy administrative load for the semester. This exacerbated the supervision problem. However, under any circumstances, it would be difficult to keep tabs on twenty-nine projects in sixteen different courses, plus the separate work on the teaching assistant evaluation procedures. Even though students worked with supervising faculty, I still wanted to discuss their preparation and evaluation with all participants. I also had to arrange for the peer observations, and reward procedures. Several group sessions were held to take care of some of these matters, and to review some projects. Viewed from any perspective, it is an undertaking which should be handled with greater sharing of faculty responsibility. After all, no one faculty member assumes ultimate direction for all research training.[1]

Reflection on the second semester's program also suggests two additional and related concerns. First, we will need to insure that this individualized program is carefully developed if it is to lead to meaningful growth for the individual. The experiences should form some coherent pattern. Second, we will need to develop a procedure for monitoring the student's choices and performances, so that he may be guided in his choices, and so that we have appropriate information at hand when he begins seeking recommendations for employment. I have discussed this concern with the department head, but have yet to develop procedures.

One advantage of this part of the program is that, despite the load on the director, it should prove reasonably easy to institutionalize. As noted above, the faculty were co-operative, many of the participants chose to receive academic credit for their tasks, rather than grant support, and the department is prepared to award credit for these teaching experiences.

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[1] Though our department head does review every student's course programs himself each semester, and I do likewise for most of our undergraduate majors. We have a tradition of limited delegation of certain responsibilities!

Conclusions

At the outset of writing this paper I indicated I would conclude with generalizations drawn from analysis of the year's events. It now seems to me that this would generally be redundant, assuming the reader has had the fortitude to read the previous sections. Those paragraphs dealing with goals, at the beginning of each section, and those dealing with recommendations at the end of each section, would constitute the main thrust of any remarks I might make by way of generalization.

In conclusion, then, I would only like to add some remarks on the director's role and on institutionalization.

In a project such as this, the director may need to be prepared to do a considerable amount of missionary work in the department, by whatever means seem appropriate for the environment and personalities. This work will include soliciting faculty co-operation, stimulating student and faculty awareness and concern for teaching in day-to-day contacts, raising questions about time-honored degree requirements and finding acceptable alternatives. All of this demands considerable skill and time, depending on the degree to which faculty regard geographic education as a shared specialty, or as the charge of one individual. The director should consider these questions and arrange to adjust other responsibilities accordingly.

With respect to institutionalization, it is important to broaden the base of participation by students and faculty, if we are to regard preparation for teaching as part of the normal doctoral program. It involves not only providing special seminars and teaching experiences, but re-examining

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d faculty, if we are to regard
normal doctoral program. It involves
teaching experiences, but re-examining

the total degree program, reward structures[1], departmental policies on criteria for faculty recruitment and so on. These considerations will not be handled in a year or two of national project support, but if programs are to survive and be useful it behooves the director and supporting faculty to begin working on them.

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[1] How much will grade point count, and how much teaching progress, and making decisions about awarding scarce assistantships and fellowships?

Appendix L

UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

Department of Geography Nov. 5, 1973

A.A.G. Project

Teaching and Learning in Graduate Geography

Spring Semester Teaching Options

A-30

The objective of the spring semester component of the T.L.G.G. project is to give you the chance to experience teaching in a wider range of situations than normally available through assignment to an assistantship in an introductory course. Although valuable, the assistantship does not provide the opportunity to prepare yourself for many of the teaching situations you will confront in your professional career.

The options available this spring will permit you to tackle some teaching assignment in almost any one of the department's courses. Projects may be undertaken for 495 credit (see below) or for payment of as a consultant. The level of credit or payment will depend on the scope of the project.

The goal of the program is to involve as many graduate students and faculty as possible. The tasks undertaken may be relatively small or of significant dimensions. Graduate students at any stage in their degree programs are welcome.

Options suggested by faculty

Alexander:	Geography 200	(see Monk)
	Geography 272	Develop itinerary for Spring field trip Supervise undergraduate student field project.
	Geography 303	Develop class exercise in morphometric analysis Plan & lead a one day field trip. Deliver guest lecture(s).
Charton:	Geography 102	(see Lowry)
	Geography 272	(see Alexander)
	Geography 314	Review reading selections and prepare reading list suitable for course.
Eyton:	Geography 378	Prepare laboratory exercises.
	Geography 495	Guest teach units. Themes of special interest: factorial ecology; multidimensional sealing; input-output analysis.

Fellmann:	Geography 383	Give e.g. resi citi
Foster:	Geography 357	Lectu aspec (e.g. geogr Devel rathe
	Geography 373	Devel etc. dot Prepa of SY of co
Johnson:	Geography 295 Geography 495 (Soils)	Devel
	Geogrpahy 495 (Zoogeography)	Respo Paper
Lowry:	Geography 102 (projects applicable to climatic courses generally)	Devel indic Prepa of lo
	Geography 313	Devel
	Geography 495	Help (L. H use a
Monk:	Geography 200	Super resea
	Geography 210	Super or cr class game
	Geography 297	Teach
O'Loughlin:	Geography 342	Devel of co

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CHAMPAIGN

Department of Geography Nov. 5, 1973

A.A.G. Project
Learning in Graduate Geography

Semester Teaching Options

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(see Lowry)
(see Alexander)
Review reading selections and prepare reading list suitable for course.

Prepare laboratory exercises.
Guest teach units. Themes of special interest: factorial ecology; multidimensional sealing; input-output analysis.

Fellmann:	Geography 383	Give block of lectures on particular topic--e.g. Urban hierarchies and interaction nodes; residential land use and social geography of cities; patterns of industrial land use.
Foster:	Geography 357	Lectures on special topics. suggestions: aspects of physical geography; economic geography (e.g. oil and energy problems); political geograby (e.g. Suez Canal) Developing new course design based on systematic rather than regional treatment.
	Geography 373	Developing block of course--lectures, exercises etc. Suggestions--isoline maps, choropleth maps, dot maps. Preparing manual and materials for teaching use of SYMAP. Illinois program and related teaching of computer graphics unit.
Johnson:	Geography 295	Developing local field trip.
	Geography 495 (Soils)	
	Geogrpahy 495 (Zoogeography)	Responsibility for leading portion of seminar. Paper critiqueing.
Lowry:	Geography 102 (projects applicable to climatic courses generally)	Develop audio-visual package on cloud types as indicators of atmospheric behavior (work begun) Prepare strip film using time-lapse photography of local weather sequence.
	Geography 313	Develop computer-based class exercise.
	Geography 495	Help plan and lead interdisciplinary seminar (L. Hopkins, L. A., W. Seitz Ag. Econ) on land use and energy problems.
Monk:	Geography 200	Supervise individual undergraduate student research project.
	Geography 210	Supervise undergraduate student team research or creative project. Guest lecture. Prepare class or field activity (e.g. decision making game environmental perception exercise)
	Geography 297	Teach undergraduate seminar co-operatively.
O'Loughlin:	Geography 342	Develop short sequence of lectures for section of course. Suggests physical or economic topics.

Roepke:	Geography 366	Prepare and deliver block of about 3 lectures on particular theme.
Thompson:	Geography 223	Prepare and deliver guest lectures--Suggested themes--urban-social-historical geography (esp. minority groups); perception; economic. Consultant--advisor to student team project groups.

Addition options

1. If the above don't turn you on, faculty members are receptive to your own project suggestions.

2. You might consider assuming responsibility (individual or team) for: Geography 195 (undergraduate Honors Seminar), or Geography 199 or Geography 299 (independent student projects).

3. Undergraduate advising--counselling undergraduates in course selection in your own area of speciality.

Credits for projects

If you elect to receive graduate credit for your participation in the project; you may do this by signing for 495 (Monk) or by arranging for 495 credit with the co-operating faculty member. It is anticipated that an informal seminar series will be scheduled (every two or three weeks) to discuss aspects of your projects. Credit for this seminar would be linked to project credit.

Interpretive Paper

Project on Teaching-Learning in Graduate Geography

University of Iowa

This paper is structured as follows: first a rather straightforward assessment of the several individual components of the Iowa TLGG program is presented. This is based in the case of one component (the Boone Retreat) on a formal questionnaire administered to participants and in the case of the other components on series of less formal but none the less revealing interviews with a sample of the target (graduate student) population. Following these assessments, the same data is ordered along the six dimensions of change laid down in the Pattison memorandum, "Suggestions and Reminders for the Upcoming Evaluation and Paper" and an assessment made for each of these dimensions.

A-32

Program Components

a. Boone Retreat: An evaluative questionnaire was distributed to all participants shortly after the conclusion of the retreat and as the report of that survey has been distributed, I will not repeat the details of those findings here. The overall impact was at the time positive and remains a favorable one. There was no particular feature of the retreat that seemed to elicit very many negative comments but, similarly - other than good times and comradeship - no particular feature of the retreat came across as contributing to the general success.

The goals of the retreat were the limited ones of (1) developing a consciousness of the worth and importance of teaching and preparation for teaching and (2) to foster a sense of community among those graduate

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b. Seminar: The Seminar in Colleg
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The format of the seminar
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students serving as T.A.'s and the faculty involved in supervising the large undergraduate courses. Evidently these goals were not made explicit or were not totally accepted because several seemed to expect much more specific "how to do it" kinds of training.

b. Seminar: The Seminar in College Teaching was offered both semesters during the 1973-74 academic year. In the fall semester about 15 graduate students were enrolled with several others attending as auditors. This included all of the first year Teaching Assistants and with two exceptions all of the advanced Teaching Assistants. In the spring semester six were involved in the seminar, five of whom were carry-overs from the fall semester, and the other an advanced student in his last semester in residence who saw the seminar as a means of acquiring teaching skills in preparation for an academic position.

The format of the seminar in both semesters was roughly similar. Students were asked to select a course or part of a course that they were now teaching or hoped to teach and to use that course as the "case study" or vehicle for elaborating and discussing a range of teaching-learning issues. In effect they were to design teaching strategies and materials for that course using the seminar as a source of new ideas and as a means of preliminary evaluation. In the fall semester the seminar was structured in terms of the standard teaching model -- goals, objectives, strategies, evaluation: the assumption being that much of this thinking and the relevant literature in this model would be new to most geography graduate students. In the second semester students pursued particular teaching-learning topics that especially interested them. These included a) outdoor education, b) computer-assisted instruction, c) small group dynamics and discussion techniques, and d) teaching the educationally disadvantaged.

Comments about the seminar were on the whole favorable but two points of desirable change came out of the interviews with participants. One was a desire to have more material presented on how students learn. I think the fact thatthis desire was expressed is an indication of some measure of success in fostering a "learning" model for these neophyte teachers. However, the seminar director has little familiarity with learning psychology and is simply unable to help much in this area. A contrasting opinion was also expressed, namely that the seminar was most valuable when dealing with specific techniques; how to carry on discussion, how to write examination questions, etc. A second suggestion for modification was that new students not enroll in the seminar during the first semester in residence. Not only are they busy with adapting to their own subject matter training (quantitative methods, geographic theory, etc.) but some of the motivation for teaching improvement is lacking because the new students had not as yet faced a full semester of teaching responsibilities.

c. Practical Experience (Service as Teaching Assistant): Participants in the project during 1973-74, with only one or two exceptions, had departmental assignments as teaching assistants in one of several large undergraduate courses. In the case of one or two advanced people, the assignment was full responsibility for an undergraduate course and the longer term goal of the Iowa program is that all Ph.D. students will move to a position of competency and confidence such that they can assume full responsibilities during their last year in residence for a course in their area of competency.

The two main practical experience opportunities are in our introductory physical geography course and an introductory human geography course. Different faculty supervice each of these two courses in the fall

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and spring semesters and as might be expected the four supervising individuals differ in their style of supervision and the manner in which they provide learning experiences for their Teaching Assistants. In one case, the Supervising Faculty member adopted a demonstration format and conducted the first laboratory session each week with T.A.'s observing. In other cases, the T.A.'s were given considerable latitude to experiment with their own teaching styles, with successes and failures discussed in weekly meetings or individually with the Senior Teaching Mentors. In both courses efforts have been underway for several years to move the overall instructional strategy in the direction of a learning-outcome frame. Moreover, a variety of alternative modes of teaching have been tried -- role playing, debates, self-paced activities, student-led discussions, individual and team projects, etc. Inspiration and actual design of activities for these newer modes of learning have come from both supervising faculty and from enterprising teaching assistants.

d. Senior Teaching Mentors: The least cost-effective to TLGG of the four program components seems to have been the use of four advanced graduate students as Teaching Mentors. This program element was built into the Iowa project at a late date when it became clear that project funds could not be used as stipends for first-year Teaching Assistants who would participate as observor-aids to more experienced graduate student teachers. So the roles were reversed and Teaching Mentors were employed to aid and assist neophyte teachers in a manner frankly patterned after the Teaching Fellow program at The University of Michigan described by Frank Koen.

In written reports from Mentors and in interviews with Teaching

Assistants two sources of non-effectiveness were cited. Firstly, the Mentors were not sure of their role. They were not clear what they were supposed to do and they weren't clear how they could help a less experienced T.A. This seems to have been a failure primarily of management. Instructions were very open-ended -- amounting almost to "do whatever seems useful to help the beginning T.A.'s." Some blundered in and appeared threatening to the new T.A. just beginning to establish rapport with a class. Others sensed this potential difficulty and failed to do much of anything. In fairness, however, all four of the Mentors were eventually able to develop comfortable roles for themselves in working with the Teaching Assistants and were rather helpful, principally in the areas of designing and managing exercises and in constructing examinations.

A second source of non-effectiveness arose from the fact that most of the Teaching Assistants in 1973-74 were fairly experienced and were frankly resentful of having someone operate in a "big brother" role or at least seemed not to need much help. Paradoxically this condition arises from another aspect of the thrust of TLGG in the department: namely that no longer are research appointments allowed to "skim off the cream" of the graduate body, but the brighter, more capable, more experienced students are assigned and indeed some are seeking Teaching Assistant duties. And, of course, in the last few years the number of new graduate students entering the program in any one year is less than previously.

For 1974-75 we will try the Mentors again but will use only two (one in each clinical course) and will more closely monitor their activities.

A-34

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A. Growth in Awareness of Signif

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Dimensions of Change

In this section the observations and statements which were used as basic data in the first part are reordered along the six dimensions of change suggested by Pattison.

1. Growth in Awareness of Significance of Teaching Role

All evidence suggests that we have moved the graduate student body and indeed the entire department in a positive direction along this dimension. Of course, a number of pressures both national and local are contributing to the growing awareness of the significance of the teaching role. These range from the budget crunch on departments with falling undergraduate enrollment, to reduced job prospects at research-oriented universities, to the appearance of reports favorable to teaching produced by various national blue-ribbon panels (ETS, Change magazine, etc.). Copies of several of these reports passed along from the TLGG central office or purchased with TLGG funds have been distributed widely within the department.

Interviews this past year support an assertion that activities of TLGG, notably the Boone Conference and the expanded Teaching Seminar, have contributed significantly to this awareness among the graduate students. However, other than these statements by graduate students there is little additional reliable evidence of change. Perhaps indicative of the sense of caution that needs to temper any indicators of change is a statement at a department staff meeting to the following effect: "Take it easy on this push for teaching; after all, we cannot neglect the research side."

I think this colleague was warning of the realities of university promotion and reward systems that still give emphasis to research accomplishments.

B. Enlargement of Knowledge about the Teaching-Learning Process

This is the dimension that seems to have been the weakest part of the 1973-74 TLGG at Iowa. Most all of the graduate students interviewed expressed the feeling in one way or another that "if they knew how students learned" or better "if they knew what helped different kinds of students to learn" they could more effectively organize their teaching activities. I must admit that few saw it this clearly and I could not resist helping them crystallize their views during the interview. However, most had this feeling lurking in their minds as they recalled what they thought about the seminar and about their Teaching Assistant activities. I have a hunch that our students are applying the standard inquiry model in approaching their teaching situations. This model asks that empirical observations and solutions to specific problems be structured in terms of general theories and principles.

A-35

Interestingly, several students found the seminar to be most useful when dealing with specific teaching techniques and thought those sessions devoted to more general learning principles less useful. This may be a failure not of intent but of execution.

C. Expansion in the Range of Styles and Strategies

A break away from exclusive reliance on the classic lecture-discussion format has been underway in the department's undergraduate courses for several years. Under the leadership of teachers such as Ken Rumage, Jim Gardner and others, the department has pioneered in the

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D. Increase in Commitment to

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use of fully televised presentations, in the development of computer-assisted instruction, in imaginative field problems, in student-initiated inquiry approaches, etc. Role playing, other forms of simulation, student debates and others have been tried in several courses. The several activities under the aegis of TLGG have continued to emphasize the considerable range of strategies available to a college teacher and has pointed out there is no one right way, but that an individual teacher should find that mix of strategies appropriate for his/her own abilities and for the types of students with which he/she is working.

One of the results of TLGG, especially of those activities devoted to an evaluation of learning outcomes, has been to lessen the naive enthusiasm for new teaching gimmicks just because they are new. There is an attitude of critical assessment among some of the more active TLGG participants and this seems to have lessened the desire to experiment with a broad range of styles and strategies. Rather, I sense a more careful experimentation with a limited range of styles. Conducting small group discussions, for example, is seen as a teaching mechanism long in use, but rarely realizing its full potential for individual student learning. Several of the TLGG participants have begun to explore the literature on small group dynamics and to experiment and consciously evaluate their successess and failures with discussion sections.

D. Increase in Commitment to Self-Evaluation

One of the items initiated this year for Teaching Assistants has been to ask each of them to write an assessment of their teaching activities at the end of each semester. These are done in conjunction with the student survey of teaching required of all teaching assistants and faculty. The self-evaluations are seen only by the supervising faculty and discussed only if the Teaching Assistant wishes. There was some reluctance to carry out this request at the end of the fall semester. It was seen as time-consuming and potentially threatening, but the student ratings on all T.A.'s were good and they were able to write critiques of their own teaching with some comfort. At the end of the spring semester there was considerably less reluctance to engage in this form of systematic self-evaluation.

The increase in acceptance of this task in itself is not necessarily an indicator of movement along this dimension. However, it was initiated to get neophyte teachers in the habit of systematically using all available evidence to evaluate their own teaching. End of term evaluations, of course, are only a part of the almost continual self-assessment that really effective teachers engage in. The more subtle reading of clues on the faces of individual students and the habit of consciously asking oneself at the end of each class "How did I do?" are also part of the self-assessment syndrome. TLGG is working at the level of more formal mechanisms hoping that the attitudes will filter down. In addition to the previously mentioned paper, we have made use of the diagnostics provided for each item on multiple-choice questions to systematically assess not only good and bad questions, but also content areas where improvement in teaching is indicated.

A-36

I wish good evidence of movement along this dimension were available. Although no counts are available, my judgement is that Teaching Assistants are coming to course supervisors for help with teaching problems more frequently and openly. There is less willingness to shrug off a teaching failure with some excuse about "a bunch of dummies."

F. Growth of Confidence as a Teach

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G. Relaxation of Authority Stanc

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E. Growth of Confidence as a Teacher

There seem to be two aspects of confidence involved in the sort of growth TLGG aims at producing. One is a reduction in the uneasiness one experiences in facing a class, the fear of making a mistake, the "butterflies in the stomach" that come from any competition. I think we have made progress in this sense of growth in confidence. Part just comes from experience and would happen under any Teaching Assistant program. However, TLGG seeks to foster two attitude changes that alter the interpersonal relationships and hopefully produces growth of confidence. These attitude changes are 1) that the teacher-student relationship is not totally a competitive relation but more a helping one, and 2) that the supervisor-teaching assistant relationship (actually also a teacher-student relation) is also one of being helpful.

The second dimension of confidence is that related to the knowledge of the part of the teacher that the particular strategy adopted for any day or for any set of learning objectives is the most effective in producing learning. In this sense -- as suggested above under C -- there has probably been a reduction in confidence. Graduate students serious about their teaching effectiveness expressed to me considerable self-doubt about their effectiveness. I don't judge this harmful, if a training program can follow along with the growth in skills and the growth in knowledge about learning that can build on these early results of critical self-evaluation.

G. Relaxation of Authority Stance

I have found this difficult to separate as an independent dimension of change. Moreover, the Iowa TLGG participating faculty have on their own adopted styles that would not be considered authoritarian. This has pervaded the TLGG program and observation of change along this dimension has not been systematically attempted.

James B. Lindberg
July 1974

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Appendix B

UCLA: A SPECIAL CASE

This article was taken from the UCLA Innovator, a publication of the Creative Teaching Information Center, Fall 1972, and removed from this document to conform with copyright laws.

Appendix C

INTERNALLY ORIGINATED ITEM (IOI) SERIES

Internally Originated Item (IOI) Series

#1A "Experiments in Teaching College Geography: A Report to the Profession"
-an article from the Professional Geographer on a series of four regional conferences that preceded and prompted the TLGG Project.

#1 "Introducing a New Project"
-a presentation by William D. Pattison, National Director of the TLGG Project, to an assembly of chairmen of graduate departments of geography at the AAG convention in Atlanta, April 15, 1973.

#2 "Geography 495: The Teaching of College-Level Geography"
-syllabus, notes and bibliography for a seminar in UCLA's Teaching Preparation Program (TPP)

"Description of UCLA's Teaching Preparation Program"

"Teaching Questionnaire"
-a questionnaire given to TPP participants before and after the program.

#3 "The University of Colorado Department of Geography Graduate Program in Geographic Education (July 1, 1973)"
-the initial statement of rationale and activities proposed for Colorado's Program in Geographic Education.

#4 "A Brief Description of TLGG Developmental Programs"
-a synopsis of the proposed programs at each of the five funded sites, plus an appendix on UCLA.

#5A,B,C Descriptions and Evaluations of the Orientation/Retreat Programs held at Illinois, Iowa and Colorado in Autumn, 1973.

#6A-F Six TLGG program descriptions, originally prepared for distribution at the NCGE convention in Washington, D.C., November, 1973.

#6F,G,H "Some Important Considerations for the Establishment of of Graduate Student Teaching Preparation Programs: A Checklist"
-UCLA handout at NCGE convention, 1973.

"Teaching Preparation Program Activities, Fall Quarter, 1973"
-UCLA handout at NCGE convention, 1973.

"Planning for Program Effectiveness"
-UCLA handout at NCGE convention, 1973.

#7 "Premise, Purpose, Problem,
-Remarks by William D.
preparation programs a
D.C., November, 1973.

#8 "Some Thoughts on Evaluatio
-statement by L. Dee Fi
suggesting a framework
evaluation.

#9 "The Evaluation of Teaching
-outline and bibliograp
of UCLA at a seminar

#10 "A Review of Recent Reports
-a review of five natio
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ted Item (IOI) Series

College Geography: A Report to

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ta, April 15, 1973.

ching of College-Level Geography"
bibliography for a seminar in
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nt of rationale and activities
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TLGG Developmental Programs"
roposed programs at each of the
plus an appendix on UCLA.

tions of the Orientation/Retreat
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rogram Activities, Fall Quarter, 1973"
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ffectiveness"
E convention, 1973.

#7 "Premise, Purpose, Problem, and Prospect: An Interpretation"
-Remarks by William D. Pattison at a session on teaching preparation programs at the NCGE convention, Washington, D.C., November, 1973.

#8 "Some Thoughts on Evaluation for TLGG Programs"
-statement by L. Dee Fink, TLGG Associate Director, suggesting a framework for conducting program evaluation.

#9 "The Evaluation of Teaching Effectiveness"
-outline and bibliography for a talk by Keith Julian of UCLA at a seminar at Berkeley.

#10 "A Review of Recent Reports on Higher Education"
-a review of five nationally known studies on higher education for comments on the proper preparation of teachers in higher education.

Appendix D

EXTERNALLY ORIGINATED ITEM (EOI) SERIES

Externally Originated Item (EOI) Series

#1 "The Teaching of Botany"
-a series of two articles in the New Phytologist in 1923 by Frederic E. Clements with some remarkably "modern" ideas on the proper way to teach a college course.

#2 "Tactics for Change"
-a checklist created by a group at MIT on ways to induce educational change.

#3 "Educational Seduction"
-a report on an experiment that tested listener-satisfaction with an "impressive lecture..with irrelevant, conflicting and meaningless content."

#4 "The Apprentice Teacher"
-memo to the Faculty from the Center for Research on Learning and Teaching at the University of Michigan on programs preparing graduate students for teaching.

#5 "Preparation for College Teaching in a Research Dominated Reward System"
-report of three survey studies at the University of Michigan on programs preparing graduate students for teaching.

#6 "Professional Problems: Preparation for a Career in College Teaching"
-report on a seminar at the University of Virginia on preparing for a career in college teaching.

#7A "Agenda for Seminar on College Teaching"
-syllabus for a seminar in the department of geography at Michigan State University.

#7B "The Preparation of College Teachers"
-an article by the psychologist Frank Koen outlining six dimensions of college teaching and including descriptions of actual and ideal training programs.

#8 "Teach-In: Suggestions for Developing College Instruction"
-materials from the Learning Resource Program of Utah State University on twenty-eight topics (e.g., technology and instruction).

#9 "Getting Started: A Guide for Beginning College Instruction"
-a booklet developed by the Associate Instructor Teaching Skills Program at Indiana University.

#10 "The Teaching Environment"
-an article on institutio
room reward structures
and their effect on teac

#11 "The Keller Plan in Science T
-an article from Science

#12 Excerpts from "Self-Confront
tualization of Video Playboo
-comments on the use of

#12B "Student Faculty Evaluation"
-article from Science e
ratings of faculty teac

#13 "Improve Teaching, Prevent S
-synopsis from Chronicle
port by the Group for H
Education.

#14 "Goals for California Higher
-Summary of an ETS study
groups for four types o

#15 "Goals for Higher Education:
-an ERIC/Higher Educatio
statements for higher e
the United States and

#16 "Preparing College Teachers"
-a chapter from the boo
Professional Education
experimental programs
of college teachers.

#17 "Beyond Student-Centered Te
-article from Change
educational reform bey
authority.

d Item (ECI) Series

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Clements with some remarkably
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by a group at MIT on ways to
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Teaching in a Research Dominated

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or Developing College Instruction"
Learning Resource Program of Utah
twenty-eight topics (e.g., tech-
on).

e for Beginning College Instruction"
by the Associate Instructor
ram at Indiana University.

#10 "The Teaching Environment"
-an article on institutional, departmental and classroom reward structures and psycho-social relationships, and their effect on teaching and learning.

#11 "The Keller Plan in Science Teaching"
-an article from Science evaluating the Keller Plan.

#12 Excerpts from "Self-Confrontation Reviewed: A Conceptualization of Video Playbook in Teacher Education"
-comments on the use of video tape in teacher education.

#12B "Student Faculty Evaluation"
-article from Science evaluating the value of student ratings of faculty teaching.

#13 "Improve Teaching, Prevent Stagnation"
-synopsis from Chronicle of Higher Education of a report by the Group for Human Development in Higher Education.

#14 "Goals for California Higher Education"
-Summary of an ETS study of goal priorities by different groups for four types of colleges in California.

#15 "Goals for Higher Education: Definitions and Directions"
-an ERIC/Higher Education report reviewing goal statements for higher education since 1948, both in the United States and internationally.

#16 "Preparing College Teachers"
-a chapter from the book, Reform in Graduate and Professional Education describing reasons for and experimental programs of reform in the preparation of college teachers.

#17 "Beyond Student-Centered Teaching"
-article from Change Magazine advocating a type of educational reform beyond the reduction of teacher authority.